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Ontario Provincial Report on Achievement English-Language Schools

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Education Quality and Accountability Office

ASSESSMENT RESULTS:

- **EQAO Grade 3 Reading, Writing and Mathematics**
- **EQAO Grade 9 Mathematics**
- **Council of Ministers of Education, Canada: School Achievement Indicators Program**
- **Third International Mathematics and Science Study**

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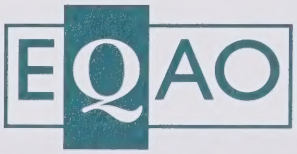
Ontario Provincial Report on Achievement English-Language Schools



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Note: In this report, the word "parent(s)" means a parent, legal guardian or any other person who acts as a caregiver.

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The Board of Directors

EQAO's Board of Directors
Back row (from left to right): Doretta Wilson, Dominic Giroux, Bette Stephenson (Vice-Chair), Jerry Ponikvar, Maureen Kempston Darkes, Joan M. Green (CEO). *Seated:* Martin Cugelman, Barbara Smith (Chair), Robert Surtees.

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October 30, 1998

The Honourable David J. Johnson
Minister of Education and Training
900 Bay Street, Mowat Block, 22nd Floor
Toronto, Ontario
M7A 1L2

Dear Minister,

The Board of Directors of the Education Quality and Accountability Office (EQAO) is pleased to present its second *Annual Report* and second *Provincial Report on Achievement.*

Consistent with EQAO's commitment to public accountability, our *Annual Report* for 1997-1998 reviews our own performance in relation to stated values and goals. As was the case last year, the *Provincial Report on Achievement* details EQAO's assessment and research activities during the 1997-1998 fiscal year. The report includes comprehensive information on assessment results at the board, provincial, national and international levels. It addresses the contextual information associated with performance, and provides details about development, administration and quality control measures. We believe that this report will provide the people of Ontario with a clear snapshot of the performance of their public education system.

EQAO's mission is to enhance accountability and contribute to improved quality in publicly funded education. The achievement data and recommendations for improvement that we issued last year have served as a catalyst for constructive change in schools and communities across Ontario. Our Education Quality Indicators Program (EQUIP) will provide additional information on the learning context which will support improvement at the provincial, board and school levels.

We trust that you will find these reports to be informative and useful.

The Board of Directors of EQAO

Barbara Smith, Chair
Bette Stephenson, Vice-Chair
Martin Cugelman
Maureen Kempston Darkes
Dominic Giroux
Jerry Ponikvar
Robert Surtees
Doretta Wilson

Provincial Report on Achievement

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Chair's Remarks

Over the past decade, public institutions everywhere have had to satisfy growing demands for better quality and greater accountability. Citizens now expect that all public institutions will demonstrate their accountability by being open and accessible.

Ontarians have high expectations of their publicly funded school system. Their high expectations stem from a conviction that strong, effective public schools are the foundation of healthy, vibrant communities.

Schools are at the heart of any democratic society because they teach students to think critically and constructively about the world around them. Moreover, within a knowledge-based economy, schools are responsible for ensuring that all students graduate with the knowledge and skills they will need to lead lives that are productive and purposeful.

As Ontario's education auditor, EQAO provides accurate, reliable and current information about student achievement and the quality of publicly funded schools. Educators, parents, policy makers and members of the public can use the information we release as they develop curricula, plan programs and make decisions.

At a time when education is the subject of intense public debate, it is important to underline EQAO's objectivity. We are an arm's-length agency governed by an independent board of directors. Our mandate necessitates that we conduct our assessments and report our findings in an objective and credible way.

We consult and collaborate with stakeholders as we do our work and develop our recommendations. But we are not apologists or spokespersons for any particular interest. Our job is to report the facts about student achievement and to provide recommendations for improvement.

Our Board is pleased to present this second annual *Provincial Report on Achievement.* The report illustrates some of the concrete improvements that have resulted from the efforts of educators and parents. Improvement for both the individual student and the system as a whole is the ultimate goal of all our work.

This report will be a valuable resource for parents, educators, policy makers and members of the public as they work to strengthen Ontario's school system and help all students achieve academic success.

Barbara Smith, Chair
Board of Directors

CEO's Message

Good assessment of academic achievement reflects the complexity of human learning. Albert Einstein was known to caution against drawing simple conclusions in complex situations. He often invoked the adage "Not everything that counts can be counted and not everything that can be counted counts." We advise everyone to consider all of the factors in the classroom, school, home and community that affect achievement. Thorough consideration yields wise judgments, which in turn support better decision-making in the interests of all students.

Effective assessment improves student learning and benefits students through useful feedback, clearer expectations, enhanced motivation and better instruction. Individual teachers and system leaders constantly gauge how well students are learning. This process allows them to evaluate the success of policies, programs and strategies on the basis of accurate and reliable data. These evaluations not only support constructive interventions, they also enhance public understanding of the efforts that are currently under way and the gaps that have yet to be closed.

Testing provides information and insights about what educators and parents can and should do to help students learn more effectively. Genuine accountability stems from regular conversations between classroom teachers and parents about students' progress. By grounding their conversations in reliable data, testing helps teachers and parents identify students' learning strengths and weaknesses.

The second *Provincial Report on Achievement* incorporates what we have learned from two years of experience in province-wide testing and from discussions with educators, parents, students and members of the public. EQAO's mandate is to promote both accountability and improvement. This report provides a picture of student achievement in Ontario. Perhaps more importantly, it provides recommendations and strategies that educators and parents can use to support improvement for every student and the system as a whole.

In May we conducted the second annual Grade 3 assessment in reading, writing and mathematics and launched our first secondary school initiative, an assessment of Grade 9 students' achievement in mathematics. We also consulted many Ontarians about the design of our new Education Quality Indicators Program (EQUIP). This initiative creates a set of markers that will supply richer information for understanding student achievement and evaluating education quality. We will begin pilot testing EQUIP this year.

This year's *Provincial Report on Achievement* illustrates how boards and schools have used province-wide assessment data as a basis for inquiry, reflection, discussion and action. The attention our assessment data have received is encouraging, since the real value of any assessment lies in the follow-up that takes place after the results become known.

Seldom in the history of our province has education occupied such a prominent place in conversations around the dinner table, at work, on the news and in the community. Mindful of this continuing public debate, we submit our report as a solid foundation for informed discussion and action. Used constructively, it will give students, educators, parents and members of the public cause for optimism about what we can all accomplish together.

Joan M. Green
Chief Executive Officer

Characteristics of Effective Assessment

EQAO Mission

EQAO will ensure greater accountability and contribute to the enhancement of the quality of education in Ontario. This will be done through assessments and reviews based on objective, reliable and relevant information, and the timely release of that information along with recommendations for system improvement.

ONTARIO'S LARGE-SCALE ASSESSMENT PROGRAM

Is based on the expectations and achievement levels in the *Ontario Curriculum*.

- EQAO's province-wide assessments provide a common, objective measure of how well students are achieving the provincial expectations in language and mathematics.

Uses a variety of formats and instruments to measure what students know and can do.

- Students are asked to demonstrate what they know and can do in a variety of ways. EQAO's assessments feature performance tasks that test how effectively students can apply what they know in order to solve real-world problems. The assessments also use other formats, such as short-answer and multiple-choice questions, to test students' mastery of basic facts and concepts.

Models effective assessment strategies for regular classroom use.

- The tasks and activities in EQAO's province-wide tests give teachers a range of models, methods and resources they can use to gather and communicate feedback about how well students are learning.

Gives educators and parents a window on student learning.

- More than simply asking students to recall and recite facts, EQAO's assessments require students to go further and apply what they have learned. The assessments give parents and educators insight into how students think as they solve problems and answer questions.

Supports improvement for the individual learner and for the education system as a whole.

- Province-wide assessment results yield information that teachers and parents can use to provide instruction and support for individual students and that administrators and policy makers can use to evaluate programs and make decisions.

Incorporates capacity-building opportunities for educators.

- Educators are actively involved in the development, administration and marking of EQAO's province-wide assessments. Participation in large-scale assessment processes provides teachers with improved understanding of the *Ontario Curriculum* and strategies for integrating assessment into daily instruction.

Provides contextual information which allows educators, parents and the public to interpret results in a responsible and constructive manner.

- As part of every province-wide assessment, EQAO asks students, parents, teachers and principals to complete questionnaires which provide information on the learning environment, inside and outside the school. This information represents essential background for understanding assessment results.

Moves beyond statistics to specific plans for improvement.

- Following every assessment, school and board staff work together with parents and local communities to interpret student assessment results and develop action plans for improving learning and teaching.

Characteristics of Effective Assessment

EQAO Values

EQAO values the well-being of learners above all other interests.

EQAO values only that information which has the potential to bring about constructive change and improvement.

EQAO values the dedication and expertise of Ontario's educators and will work to involve them in all of its activities.

EQAO values the delivery of its programs and services with equivalent quality in both English and French.

Engages all partners in the education community in making constructive use of good information.

- Student achievement is influenced by everything that is happening in the classroom, school, home and community. Using student assessment results, EQAO makes recommendations which increase the capacity of systems and people to improve student achievement.

Promotes accountability between teachers and parents, and between schools and communities.

- Genuine accountability starts with relationships built on trust, common expectations and a shared commitment to high achievement. EQAO's province-wide assessments support such relationships with accurate and reliable information about student achievement and education quality.

Recognizes that large-scale change requires local collaboration, commitment and action.

- EQAO reports student results provincially. Schools and boards are responsible for reporting student results to parents and their communities and for building a local consensus about what needs to be done.

Is linked to a quality indicators program that establishes a rich context for reporting student achievement and for assessing quality in the school system.

- Indicators provide qualitative and quantitative information about important features of a system. EQAO's Education Quality Indicators Program (EQUIP) will give educators, parents and citizens information they can use to interpret situations in schools and determine helpful directions.

Assessment Activities 1997-1998

The value of assessment at an early stage, such as the end of Grade 3, is that it gives a clear indication of a child's strengths and weaknesses, and shows where school and home efforts must be focussed and monitored. There is also value in a different kind of assessment for accountability near the end of a student's secondary schooling. As a fundamental guarantee, the education system must assure the public that a high school diploma signals adult literacy; that no high school graduate is incapable of reading and writing well enough to communicate in a post-secondary classroom, on the job, or in order to meet the demands of everyday life as a citizen and voter.

– Ontario Royal Commission on Learning (1994)

PROVINCIAL

EQAO conducts a range of province-wide assessments. The Grade 3 assessment occurs annually and involves all Grade 3 students. It measures student achievement of the provincial curriculum expectations in reading, writing and mathematics. EQAO generates an *Individual Student Report* for every student who participates in the assessment. This report provides parents and teachers with feedback on the achievement of every student, measured against 17 subject categories and mathematics strands.

In 1997-1998, besides conducting the Grade 3 assessment, EQAO tested a province-wide sample of Grade 9 students in mathematics. This was the agency's first secondary school initiative. The results of the Grade 9 assessment provide a snapshot of student achievement at the provincial level which educators, parents and policy makers can use to reinforce what is working well and to identify areas where other strategies may be required to bring about improvement. In 1996-1997, EQAO assessed a similar province-wide sample of Grade 6 students in mathematics.

Earlier this year, the government announced plans to expand Ontario's province-wide testing program. As a result, in 1998-1999, in addition to assessing all Grade 3 students in reading, writing and mathematics, EQAO will assess every Grade 6 student in the same three subject areas. Doing so will enable EQAO to provide individualized feedback to a larger number of students, teachers and parents. The Grade 3 and Grade 6 assessments will support improvement for individual students, schools and the school system.

In 2000-2001, EQAO will launch a Grade 10 literacy assessment that will give students objective feedback on whether they have acquired the literacy skills they will need to succeed as individuals and as members of a rapidly changing, knowledge-based society. In order to obtain their high school diploma, students will have to complete the assessment successfully.

NATIONAL

At the national level, EQAO is responsible for Ontario's participation in the School Achievement Indicators Program (SAIP), which is conducted under the auspices of the Council of Ministers of Education, Canada (CMEC). The report from the mathematics assessment (administered in 1997) was released in February 1998. The reading and writing assessment was administered to 13-year-old and 16-year-old students in April and May of 1998.

EQAO has participated in the preparation of the test materials for all previous SAIP assessments, and is currently involved in the preparation of the next SAIP assessment in science, scheduled for April and May 1999.

Assessment Activities 1997-1998

INTERNATIONAL

EQAO is responsible for Ontario's participation in international assessments. In November 1996, EQAO released the results of the written component of the Third International Mathematics and Science Study (TIMSS) for Grade 7 and Grade 8 students. In June of 1997, EQAO released the results of the written component for the Grade 3 and Grade 4 students. The results of the practical component of the assessment for the Grade 4 and Grade 8 students were released in September 1997. The results of testing for students at the end of secondary school (Grade 12 and OAC in Ontario) were released in February 1998.

In the spring of 1999 there will be a TIMSS Repeat (TIMSS-R) project that will test randomly selected samples of Grade 8 students in the written component only. It is expected that results will be released in July 2000.

Ontario is also participating in the Second Information Technology in Education Study (SITES), which, like TIMSS and TIMSS-R, is a project coordinated by the International Association for the Evaluation of Educational Achievement (IEA). The study will involve a random sample of schools that enroll Grade 5 and Grade 9 students, and will also include students in their final year of secondary school (Grade 12 and OAC in Ontario). The study is meant to gather information about new technologies that are being used in schools, the perceived barriers to implementation, and the elements that enhance or facilitate implementation of new technologies in schools. In November 1998, information will be gathered through questionnaires administered to principals and school computer coordinators.

Following the release of data for students who participated in the Third International Math and Science Study (TIMSS), EQAO commissioned a team of researchers to analyze the data and identify best practices in curriculum, teaching and teacher education; factors associated with high achievement; and trends and factors related to francophone student achievement. In January 1998, the researchers submitted a report to EQAO entitled *Ontario in TIMSS: Secondary Analysis and Recommendations.*

EQAO also asked the researchers to examine Ontario students' errors, misconceptions and approaches to open-response questions in TIMSS. The researchers submitted a report entitled *Ontario Profiles of Performance in Mathematics and Science* in July 1998.

These research efforts have been used to develop instructional materials for Grade 4, Grade 8 and secondary school teachers.

Assessment Activities 1997-1998

LEVEL	POPULATION	SUBJECT	STATUS
PROVINCIAL	All Grade 3 students	Reading, Writing, Mathematics	Assessment completed Individual results released in early fall 1998; school, board and provincial results released Oct. 1998 Development of materials for spring 1999 assessment
	All Grade 6 students	Reading, Writing, Mathematics	Development of materials for spring 1999 assessment
	Grade 9 students in randomly sampled schools	Mathematics	Assessment completed Provincial results and information for schools released Oct. 1998
	All Grade 10 students	Literacy	Planning of assessment instruments and policies
NATIONAL SAIP	Randomly sampled 13- and 16-year-old students	Mathematics	Assessment completed 1997 Results released Feb. 1998
	Randomly sampled 13- and 16-year-old students	Reading, Writing	Assessment completed 1998 Results due Jan. 1999
	Randomly sampled 13- and 16-year-old students	Science	Development of materials for spring 1999 assessment
INTERNATIONAL TIMSS	Randomly sampled students in final year of secondary school (Grade 12/OAC)	Mathematics, Science (written component)	Assessment completed 1995 Results released Feb. 1998
TIMSS-R	Randomly sampled Grade 8 students	Mathematics, Science (written component)	Development of materials for spring 1999 assessment
SITES	Randomly selected schools enrolling students in Grades 5 and 9, and students in their final year of secondary school (12/OAC)	Use and availability of information technology in schools (questionnaires for principals and school computer coordinators)	Development of materials for Nov. 1998 survey

Building Assessment Expertise

Everyone who has ever been engaged in teaching knows that it is a thinking process. Effective teaching requires constant evaluation of your beliefs in light of your classroom behaviours – and constant evaluation of your classroom behaviours in light of the student outcomes for which you are aiming. Good teachers never reach stasis; they are always striving to "do it" better.

– Pauline Gough (1996)

Assessment is an integral part of effective learning and teaching. EQAO's province-wide assessments help teachers and parents identify what they can do to help students learn better.

Teachers assess students' academic achievement on a daily basis so that they can plan instruction and develop programs which meet students' needs. To do this well, educators need frequent opportunities to expand their repertoire of assessment strategies and build their expertise in selecting and using the most appropriate assessment methods. Province-wide testing helps to address this need by providing educators with opportunities to discuss, share and apply good assessment strategies.

Many educators are involved in EQAO's province-wide testing programs. Teachers and principals collaborate with EQAO staff to develop, implement and mark each assessment. Through their participation in these processes, educators become more familiar with the provincial curriculum and gain expertise in the design and delivery of quality assessment. Teachers who mark EQAO's province-wide assessments indicate that this experience is particularly valuable because it helps them develop a thorough understanding of the provincial expectations and gives them opportunities to discuss effective practices with colleagues from across the province.

By participating in province-wide assessment processes, teachers acquire skills and materials they can use to improve their instruction. EQAO's assessments provide examples of effective strategies and techniques which teachers can use in their classrooms to learn more about their students' achievement and progress and to develop action plans for improvement. A significant outcome of province-wide testing is that it focuses attention on specific areas where educators might benefit from additional professional development.

Parents report that province-wide assessment results are a useful addition to the information they receive about their children's achievement throughout the year. When parents discuss assessment results with teachers, they develop a clearer understanding of what their children are expected to learn and how well they have learned it. Province-wide testing helps parents become more actively involved in monitoring their children's progress over time and allows them to work constructively with teachers to support their children's learning.

EQAO assessments give educators opportunities to expand their assessment expertise. They also focus the attention of the entire education community on the need to use assessment as a lever for improvement.

- Assessment tasks and activities give teachers a range of models they can use in daily classroom assessment. The tasks are open-ended and require students to demonstrate what they know and whether they can apply their skills effectively.
- Assessment tasks provide teachers with opportunities to observe their students and obtain specific information on what needs attention. They can use this information to refine their instructional approaches.
- During assessment periods, teachers have access to people in their district who have been trained in how to explain and use the assessment results.
- Several weeks before each assessment, teachers receive a sample assessment unit which they can use to familiarize parents and students with the assessment approach and process.

Building Assessment Expertise

- All teachers responsible for administering the assessment receive detailed guidelines and training to build their skills and confidence in assessment. Teachers are trained by their principals, who participate in training sessions organized by EQAO and receive resource materials to share with staff.
- Teachers who are not involved in administering the assessment participate extensively in developing, field-testing and validating the instruments. A broad base of teachers across the system benefit from the learning opportunities that are embedded in the various assessment processes.
- The assessments are marked by principals and teachers from every grade. Participating in the marking gives educators an opportunity to internalize the provincial expectations and the processes for achieving reliable scores. Educators take what they learn from this experience back to their own schools.
- Each school receives a report that includes its students' results along with an interpretation guide. Principals and teachers work together to interpret, communicate and use the results effectively.

Quality Control

EQAO incorporates quality-control measures into every assessment process to ensure that student results are valid and reliable. These measures monitor the quality of the assessment instruments and administration instructions, the assessment scales, training for teachers to administer the assessment, classroom administrations and the marking.

The following are examples of EQAO's quality-control measures:

- EQAO monitors the development of the assessment instruments and the scoring scales to ensure validity and consistency. EQAO confers with educators, assessment experts and stakeholder groups at various stages to validate the assessment instruments and scales in relation to the provincial curriculum and to ensure that the instruments are free of bias.
- EQAO field-tests all assessment materials and processes in a cross-section of schools across Ontario. Information and feedback obtained from the field-test experiences is used to revise the materials and processes.
- EQAO uses a train-the-trainer model to train the teachers who administer the assessments. Training sessions are monitored for quality and consistency using a combination of on-site observation and participant questionnaires.
- Observers visit a representative number of classrooms across the province during the administration of each assessment to monitor the level of consistency. The observers examine the conditions under which the administration is taking place and monitor the administration process to determine if the procedures set out in the *Teacher's Daily Plans* are being followed.
- EQAO monitors the quality of the two-day training sessions provided for teachers and principals who mark the assessments. The markers complete a detailed questionnaire on the quality of the training sessions. Where necessary, additional training is provided.
- Several mechanisms in the marking process ensure the consistency of scoring decisions. These include daily orientation papers that are scored individually and reviewed in groups, marking in pairs at the beginning of the process, daily reliability papers that are scored by each marker, and re-marking of a certain number of unidentified student booklets each day.
- At the end of the marking process, participants complete a detailed questionnaire on the quality and professional value of the experience.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

General Information

- Administered May 1998
- 131,000 students
- 7,300 teachers
- 7,300 classrooms
- 3,300 schools
- Five-day unit of work
- Students completed assessment tasks independently
- Based on the expectations in the new *Ontario Curriculum*
- Scored using four achievement levels
- *Individual Student Reports* distributed in October 1998
- *Provincial Report* released in October 1998
- School and board results and action plans released locally

The Grade 3 assessment is conducted annually in every publicly funded Ontario elementary school. It measures how well Grade 3 students have met the provincial expectations in reading, writing and mathematics. It covers knowledge and skills that students are expected to have acquired in Grade 3 and the earlier grades. This year's assessment was based on the new *Ontario Curriculum* which was introduced in September 1997.

The test took place over a period of five days from May 25 to 29, 1998. For three hours each day, students participated in brief introductory activities with their classmates and teacher and then worked independently to solve problems, answer questions and write on various topics. The theme of this year's assessment was *Inventions, Investigations and Discoveries.*

During the assessment, students read several kinds of materials (including stories, factual information and poetry) and were then asked to show understanding of what they had read. They did this in a variety of ways. For example, they identified the main ideas and connected them to their own experiences. They also demonstrated their ability to use punctuation and phonics as well as word and sentence patterns to enhance their understanding.

Students worked independently to write both an imaginative story and a journal entry in which they discussed an idea, event or experience. Each student and her or his teacher also selected a third piece of writing to submit for marking.

Students demonstrated their understanding of mathematical concepts by solving problems, applying procedures and explaining how they had arrived at their answers. The assessment covered the five strands of mathematics: number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability.

EQAO recognizes that students with special needs may require support in order to participate productively in an assessment. Teachers were able to assist such students by providing certain accommodations. For example, they could allow extra time, help students organize and pace the activities, provide a quiet work space, permit students to use assistive devices, present the assessment tasks in a different format, or allow students to use various technological resources.

In a small number of cases, a student's special needs were such that the student was exempted from participating in the assessment. The principal and teacher could exempt any student whose participation would have been non-productive or harmful. Before granting an exemption, school staff were required to consult with the student's parent(s) and obtain written parental consent. School staff could exempt the student from participating in part or all of the assessment.

All accommodations and exemptions were reported to EQAO.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

Comparing Grade 3 Assessment Results over Time

The 1997-1998 Grade 3 assessment was based on the new *Ontario Curriculum* that was introduced in September 1997. The 1996-1997 Grade 3 assessment was based on the previous curriculum. For that reason, student results from the two assessments cannot be compared directly.

On its own, each assessment provides a wealth of information about student achievement measured against the curriculum on which it was based. Now that a new curriculum is in place, this year's assessment has the added value of providing baseline data that will allow educators, parents, policy makers and the public to look at student achievement from year to year as teachers use the *Ontario Curriculum* over time. Educators, parents, policy makers and the public will be able to monitor the system's progress towards ensuring that all students meet the expectations in the provincial curriculum.

The *Ontario Curriculum* includes a broader range of knowledge and skills than the previous curriculum. It also sets out precise and detailed expectations of what students should know and be able to do by the end of each grade.

It is important to recognize that learning is cumulative. Since this year's Grade 3 assessment was based on the new curriculum, the students who participated did not benefit from the new curriculum in Grades 1 and 2. Their Grade 3 teachers had less than one school year to develop classroom programs that incorporated the new expectations. This situation will be different starting in the year 2000 when the students who participate in the Grade 3 test will have benefitted from three years of work based on the new curriculum.

EXEMPTIONS AND ACCOMMODATIONS	1997-1998	1996-1997
Students exempt in all three subjects	3%	2%
Students exempt in Reading	5%	6%
Students exempt in Writing	4%	4%
Students exempt in Mathematics	4%	4%
Students with permitted accommodation(s) for the testing	34%	30%
■ 22% received *some* accommodation in Reading		
■ 22% received *some* accommodation in Writing		
■ 27% received *some* accommodation in Mathematics		

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about Students and Schools

- 50% of the classrooms had over 25 students in them; the average Grade 3 class size was 25.
- 46% of the Grade 3 classes contained only Grade 3 students; the rest were multi-grade classes. Last year, this figure was 30%.

  26% combined Grades 2 and 3 students.

  26% combined Grades 3 and 4 students.

  4% were other configurations.
- 48% of the participants in the Grade 3 assessment were girls; 51% were boys.
- Grade 3 students indicated that the language they speak at home was: mostly or only English, 75%; mostly or only another language, 7%; and English as often as another language, 12%.
- 5% of students were identified by their teacher as having been in an English as a Second Language (ESL) program.
- 7% of the Grade 3 students had been formally identified as exceptional and were receiving special education support.
- 13% had *not* been formally identified as exceptional but were receiving special education support.
- 4% of the students who participated in the Grade 3 assessment were enrolled in French Immersion.
- 59% of the teachers who administered the 1997-1998 Grade 3 assessment were also involved in administering the 1996-1997 Grade 3 assessment.

Reporting
EQAO reports student results in two ways.

EQAO's mandate is to assess all students in publicly funded Ontario schools.

Method 1 satisfies this mandate by reporting on how all Grade 3 students achieved on the assessment. It includes information on students who were exempted and for whom no data were collected. These students must be included in provincial assessment results as they are included in the classroom.

Method 2 excludes students who were exempted. It also excludes students who did not complete any work during the assessment. The second method presents results in a way that is helpful for understanding the achievement of those students who actually participated. All analyses of Grade 3 assessment results in this report are based on the first method of reporting.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about Achievement in Grade 3 Reading

(Refer to the charts on the following pages for detailed information.)

LEVELS 2, 3 AND 4

79% of Grade 3 students achieved at Levels 2, 3 and 4 in Reading.

LEVELS 3 AND 4

45% of Grade 3 students achieved at Levels 3 and 4 in Reading. These students demonstrate extensive to thorough knowledge, understanding and application of reading skills.

At Level 4, students understand complex ideas and information and they make and support a variety of personal connections clearly, precisely and in-depth. They understand a variety of complex text forms and they identify and explain the use of all required language conventions.

At Level 3, students understand ideas of some complexity and they can make and support a variety of personal connections clearly and precisely. They understand text forms (stories, articles and poems) of some complexity and they identify and explain the use of most language conventions.

LEVEL 2

34% of Grade 3 students achieved at Level 2 in Reading. These students demonstrate some knowledge, understanding and application of reading skills. They understand simple ideas and information and are able to make simple connections between what they read and their own experience. They use their knowledge of simple text forms to aid their understanding and they identify and explain some of the required language conventions.

LEVEL 1

6% of Grade 3 students achieved at Level 1 in Reading. These students demonstrate limited understanding and application of reading skills. They describe a few simple ideas and make a few simple but unclear personal links to what they read. They show knowledge of a few simple text forms and identify a few of the required language conventions.

MISSING

14% of Grade 3 students were not included in the analysis. 8% produced insufficient information to be scored, 1% produced no data at all and 5% were exempted from participating in the reading portion of the assessment.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

OTHER FINDINGS

Achievement at Level 2 and above	%
Overall	79
Girls	84
Boys	76
Non–English as a Second Language	81
English as a Second Language	58
Not receiving Special Education support	86
Receiving Special Education support *(excluding gifted and enriched)*	46

Achievement at Level 3 and above	%
Overall	45
Girls	52
Boys	40
Non–English as a Second Language	47
English as a Second Language	23
Not receiving Special Education support	53
Receiving Special Education support *(excluding gifted and enriched)*	12

Some differences existed among sub-groups in Grade 3:

- 8% more girls than boys scored at Levels 2, 3 and 4, and 12% more scored at Levels 3 and 4.
- 23% more non-ESL students than ESL students scored at Levels 2, 3 and 4 and 24% more scored at Levels 3 and 4.
- 46% of students who are receiving Special Education support scored at Levels 2, 3 and 4. 53% of students who are not receiving Special Education support scored at Levels 3 and 4, and 12% of students who are receiving Special Education support scored at these levels.

Reading Grade 3

KNOWLEDGE/SKILLS CATEGORIES	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
Reasoning Selects, describes, interprets and analyzes relevant information and ideas from a text to show understanding				selects and describes a few simple, concrete ideas and pieces of information	shows understanding of some simple, concrete ideas and information	shows understanding of ideas and information of some complexity by beginning to make inferences	understands complex ideas and information and makes inferences consistently related to the text	
	5%	1%	2%	7%	43%	39%	3%	Method 1: All Grade 3 students
	N/A	N/A	2%	8%	45%	42%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Communication Uses the information and ideas in different contexts by connecting them to personal knowledge and experiences and to other readings				makes a few simple links that are unclear or imprecise	makes and supports simple connections that have some clarity and precision	makes and supports a variety of connections clearly and precisely	makes and supports a variety of connections clearly, precisely and in-dept	
	5%	1%	5%	9%	39%	37%	4%	Method 1: All Grade 3 students
	N/A	N/A	5%	9%	42%	40%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Organization of Ideas Identifies and describes different organizational forms and characteristics of texts (stories, articles and poems) and uses this knowledge to aid understanding				shows knowledge of a few simple text forms and characteristics	shows knowledge of some simple text forms and characteristics and understands their use	shows knowledge of text forms and characteristics of some complexity and understands their use	shows knowledge of a variety of complex text forms and charac-teristics and understands their use	
	5%	1%	4%	14%	36%	36%	4%	Method 1: All Grade 3 students
	N/A	N/A	4%	15%	38%	39%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Application of Language Conventions Identifies and explains the use of appropriate language conventions (e.g., phonics, spelling, grammar, punctuation and style)				identifies a few of the conventions tested and gives little explanation of their use	identifies some of the conventions tested and gives some explanation of their use	identifies and explains the use of most conventions tested	identifies and explains the use of all conventions tested	
	5%	1%	4%	16%	31%	38%	5%	Method 1: All Grade 3 students
	N/A	N/A	4%	17%	33%	41%	5%	Method 2: Excludes students in "exempt" and "no data" categories
Overall Level of Achievement in Reading				demonstrates limited knowledge, understanding and application of reading skills	demonstrates some knowledge, understanding and application of reading skills	demonstrates general knowledge, understanding and application of reading skills	demonstrates thorough knowledge, understanding and application of reading skills	
	5%	1%	8%	6%	34%	42%	4%	Method 1: All Grade 3 students
	N/A	N/A	9%	6%	37%	44%	4%	Method 2: Excludes students in "exempt" and "no data" categories

REPORTING

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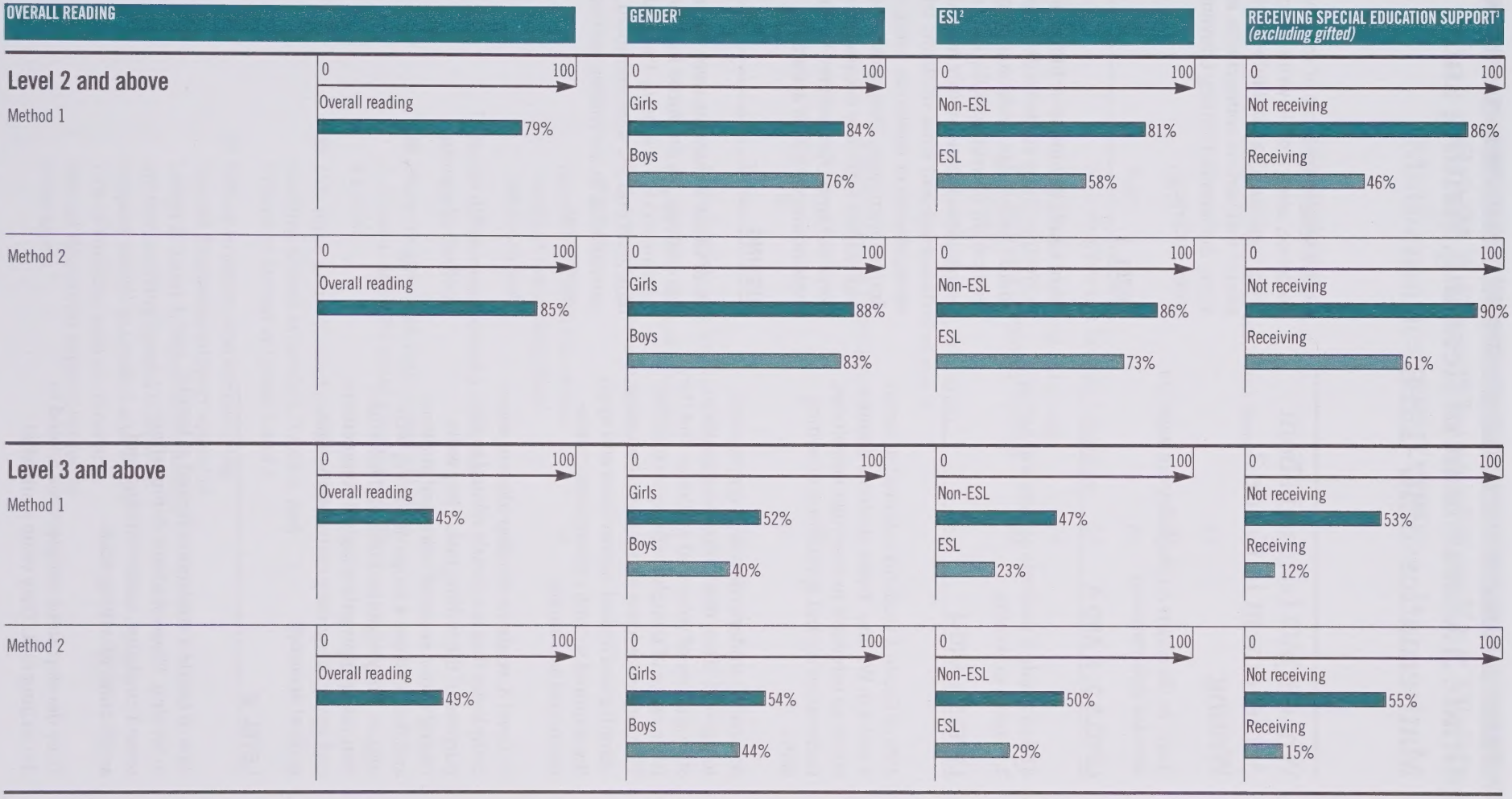
Reading Grade 3



1. *Gender differences may not be precise since gender was not specified for all students on the* Student Information Form.
2. *5% of the population were identified as English as a Second Language students.*
3. *18% of the population were receiving special education support.*

REPORTING

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Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about Achievement in Grade 3 Writing

(Refer to the charts on the following pages for detailed information.)

LEVELS 2, 3 AND 4

87% of Grade 3 students achieved at Levels 2, 3 and 4 in Writing.

LEVELS 3 AND 4

49% of Grade 3 students achieved at Levels 3 and 4 in Writing. These students demonstrate an extensive to thorough knowledge, understanding and application of writing skills.

At Level 4, students develop complex and integrated ideas, they write clearly with a strong sense of voice and audience and they use a range of complex writing techniques. They organize ideas and information using complex and logical connections and apply the required writing conventions consistently and accurately.

At Level 3, students develop ideas of some complexity that are clearly related to the purpose of the writing task. They write clearly with a sense of voice and audience and they can use a range of writing techniques. They organize ideas and information using appropriate logical connections and apply the writing conventions with general accuracy.

LEVEL 2

39% of Grade 3 students achieved at Level 2 in Writing. These students demonstrate some knowledge, understanding and application of writing skills.

They develop some simple ideas related to the writing task. They write somewhat clearly, with some sense of voice and audience, using simple writing techniques. They organize ideas and information using simple mechanical connections, and they apply the required writing conventions with some accuracy.

LEVEL 1

5% of Grade 3 students achieved at Level 1 in Writing. These students demonstrate limited knowledge, understanding and application of writing skills. They develop simple ideas inconsistently related to the writing task and write unclearly with little sense of voice or audience, using very simple techniques. They present ideas and information with only occasional connections and apply the required writing conventions with little accuracy.

MISSING

8% of Grade 3 students were not included in this analysis. 4% produced insufficient information to be scored, 1% produced no data at all and 3% were exempted from participating in the writing portion of the assessment.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

OTHER FINDINGS

Achievement at Level 2 and above	**%**
Overall	87
Girls	92
Boys	85
Non–English as a Second Language	89
English as a Second Language	74
Not receiving Special Education support	92
Receiving Special Education support *(excluding gifted and enriched)*	63

Achievement at Level 3 and above	**%**
Overall	49
Girls	57
Boys	41
Non–English as a Second Language	50
English as a Second Language	29
Not receiving Special Education support	56
Receiving Special Education support *(excluding gifted and enriched)*	13

Some differences existed among sub-groups in Grade 3:

- 7% more girls than boys scored at Levels 2, 3 and 4, and 16% more scored at Levels 3 and 4.
- 15% more non-ESL students than ESL students scored at Levels 2, 3 and 4, and 21% more scored at Levels 3 and 4.
- 63% of students who are receiving Special Education support scored at Levels 2, 3 and 4. 56% of students who are not receiving Special Education support scored at Levels 3 and 4, and 13% of students who are receiving Special Education support scored at these levels.

Writing Grade 3

KNOWLEDGE/SKILLS CATEGORIES	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
Reasoning Understands the purpose of the writing task, develops ideas and relates them to the purpose of the task and to each other				develops some simple ideas inconsistently related to the purpose of the task and/or to each other	develops some simple ideas related to the purpose of the task and to each other	develops ideas of some complexity clearly related to the purpose of the task and to each other	develops complex and integrated ideas clearly related to the purpose of the task and to each other	
	4%	1%	2%	5%	42%	40%	6%	Method 1: All Grade 3 students
	N/A	N/A	2%	5%	45%	42%	6%	Method 2: Excludes students in "exempt" and "no data" categories
Communication Uses appropriate writing techniques, including vocabulary, imagery and sentence variety to create a tone (the writer's voice) and writes for a specific audience				writes unclearly, with little sense of voice or audience, using very simple techniques	writes with some clarity, with some sense of voice and audience, using simple techniques	writes clearly, with a sense of voice and audience, using a range of techniques	writes clearly, with a strong sense of voice and audience, using a range of complex techniques	
	4%	1%	2%	6%	42%	38%	7%	Method 1: All Grade 3 students
	N/A	N/A	2%	7%	44%	40%	7%	Method 2: Excludes students in "exempt" and "no data" categories
Organization of Ideas Shows evidence of a logical plan and/or focus, and presents connected ideas				presents ideas and information with only occasional connections	organizes ideas and information using simple, mechanical connections	organizes ideas and information using appropriate, logical connections	organizes ideas and information using complex and logical connections	
	4%	1%	2%	6%	44%	38%	5%	Method 1: All Grade 3 students
	N/A	N/A	2%	7%	46%	39%	6%	Method 2: Excludes students in "exempt" and "no data" categories
Application of Language Conventions Applies language conventions correctly (spelling, grammar, punctuation, etc.)				applies conventions with little accuracy	applies conventions with some accuracy	applies conventions with general accuracy	applies conventions with consistency and accuracy	
	4%	1%	2%	7%	40%	39%	7%	Method 1: All Grade 3 students
	N/A	N/A	2%	8%	42%	41%	7%	Method 2: Excludes students in "exempt" and "no data" categories
Overall Level of Achievement in Writing				demonstrates limited knowledge, understanding and application of writing skills	demonstrates some knowledge, understanding and application of writing skills	demonstrates general knowledge, understanding and application of writing skills	demonstrates thorough knowledge, understanding and application of writing skills	
	4%	1%	2%	5%	39%	42%	7%	Method 1: All Grade 3 students
	N/A	N/A	2%	5%	41%	45%	7%	Method 2: Excludes students in "exempt" and "no data" categories

REPORTING

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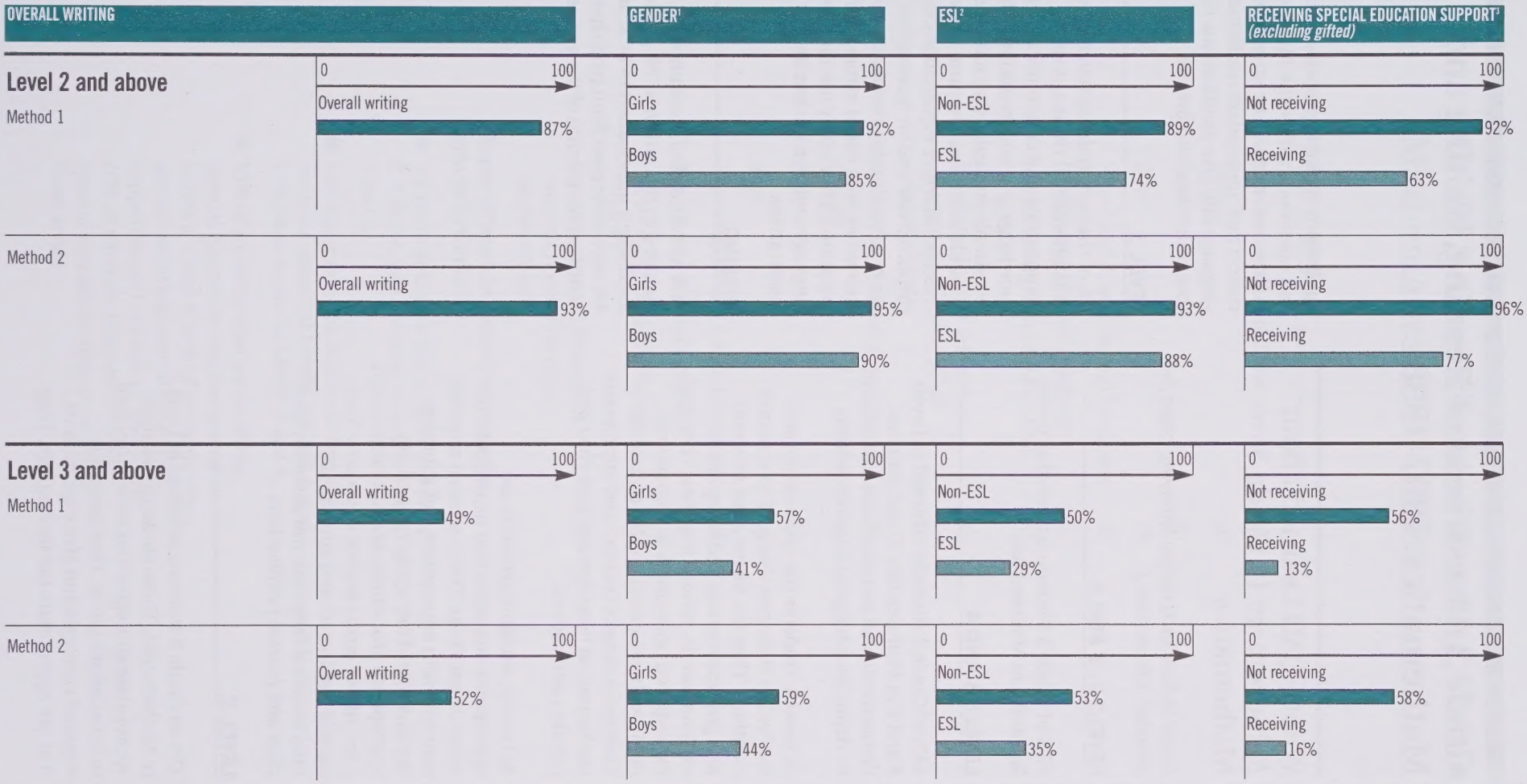
Writing Grade 3



1. *Gender differences may not be precise since gender was not specified for all students on the* Student Information Form.
2. *5% of the population were identified as English as a Second Language students.*
3. *18% of the population were receiving special education support.*

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Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about Achievement in Grade 3 Mathematics

(Refer to the charts on the following pages for detailed information.)

LEVELS 2, 3 AND 4

78% of Grade 3 students achieved at Levels 2, 3 and 4 in Mathematics.

LEVELS 3 AND 4

43% of Grade 3 students achieved at Levels 3 and 4 in Mathematics. These students demonstrate and communicate extensive to in-depth knowledge and understanding.

At Level 4, students use appropriate and innovative strategies that lead to accurate solutions. They use all required concepts and give appropriate and complete explanations in various contexts. They apply the required procedures and operations, rarely with any errors and/or omissions. They use a range of correct and appropriate mathematical language and give clear and precise justifications.

At Level 3, students generally use appropriate strategies that usually lead to accurate solutions. They use most required concepts with appropriate and complete explanations. They apply most of the appropriate procedures and operations with a few minor errors and/or omissions. They usually use correct and appropriate mathematical language and generally give clear and precise justifications.

LEVEL 2

37% of Grade 3 students achieved at Level 2 in Mathematics. These students use some appropriate strategies that sometimes lead to accurate solutions. They use some required concepts and give explanations that are appropriate but incomplete. They apply some of the appropriate procedures and operations with some minor errors and/or omissions. They sometimes use correct and appropriate mathematical language and give justifications that are somewhat clear and precise.

LEVEL 1

9% of Grade 3 students achieved at Level 1 in Mathematics. These students demonstrate and communicate limited knowledge and understanding. They use a few simple strategies that rarely lead to accurate solutions. They use a few required concepts and give explanations that are inappropriate and/or incomplete. They apply a few simple procedures and operations with major errors and/or omissions. They rarely use mathematical language and give unclear and/or imprecise justifications.

MISSING

11% of the Grade 3 students were not included in this analysis. 7% produced insufficient information to be scored, and 4% were exempted from participating in the mathematics portion of the assessment.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

OTHER FINDINGS

Achievement at Level 2 and above	%
Overall	80
Girls	83
Boys	79
Non–English as a Second Language	82
English as a Second Language	67
Not receiving Special Education support	85
Receiving Special Education support *(excluding gifted and enriched)*	55

Achievement at Level 3 and above	%
Overall	43
Girls	46
Boys	40
Non–English as a Second Language	44
English as a Second Language	31
Not receiving Special Education support	49
Receiving Special Education support *(excluding gifted and enriched)*	16

Some differences existed among sub-groups in Grade 3:

- 4% more girls than boys scored at Levels 2, 3 and 4, and 6% more scored at Levels 3 and 4.
- 15% more non-ESL students than ESL students scored at Levels 2, 3 and 4, and 13% more scored at Levels 3 and 4.
- 55% of students who are receiving Special Education support scored at Levels 2, 3 and 4. 49% of students who are not receiving Special Education support scored at Levels 3 and 4, and 16% of students who are receiving Special Education support scored at these levels.

Mathematics Grade 3

KNOWLEDGE/SKILLS CATEGORIES	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
Problem Solving Chooses and carries out strategies and applies them correctly				uses a few simple strategies that rarely lead to accurate solutions	uses some appropriate strategies that sometimes lead to accurate solutions	generally uses appropriate strategies that usually lead to accurate solutions	uses appropriate and innovative strategies that lead to accurate solutions	
	4%	3%	2%	17%	40%	31%	3%	Method 1: All Grade 3 students
	N/A	N/A	2%	19%	43%	33%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Understanding of Concepts Uses and explains required concepts and incorporates mathematical ideas and relationships				uses a few required concepts and gives inappropriate and/or incomplete explanations	uses some required concepts and gives appropriate but incomplete explanations	uses most required concepts and gives appropriate and complete explanations	uses all required concepts and gives appropriate and complete explanations in various contexts	
	4%	3%	2%	9%	37%	41%	4%	Method 1: All Grade 3 students
	N/A	N/A	3%	10%	39%	44%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Application of Mathematical Procedures Selects and accurately applies procedures (e.g., making a graph) and operations (e.g., adding and multiplying)				applies a few simple procedures and operations with major errors/omissions	applies some of the appropriate procedures and operations with several minor errors/omissions	applies most of the appropriate procedures and operations with few minor errors/omissions	applies the required procedures and operations, rarely with any errors/omissions	
	4%	3%	1%	10%	37%	41%	4%	Method 1: All Grade 3 students
	N/A	N/A	1%	10%	40%	44%	5%	Method 2: Excludes students in "exempt" and "no data" categories
Communication of Required Knowledge Uses clear explanations and correct mathematical terms and symbols; justifies reasonableness of solutions				rarely uses mathematical language; gives unclear and/or imprecise justifications	sometimes uses correct and appropriate mathematical language; gives justifications that are somewhat clear and precise	usually uses correct and appropriate mathematical language; gives generally clear and precise justifications	uses a range of correct and appropriate mathematical language; gives clear and precise justifications	
	4%	3%	3%	20%	42%	25%	3%	Method 1: All Grade 3 students
	N/A	N/A	3%	22%	45%	27%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Overall Level of Achievement in Mathematics (Based on Knowledge/Skills Categories only)				demonstrates and communicates limited knowledge and understanding in mathematics	demonstrates and communicates some knowledge and understanding in mathematics	demonstrates and communicates general knowledge and understanding in mathematics	demonstrates and communicates in-depth knowledge and understanding in mathematics	
	4%	3%	4%	9%	37%	39%	4%	Method 1: All Grade 3 students
	N/A	N/A	4%	10%	40%	42%	4%	Method 2: Excludes students in "exempt" and "no data" categories

REPORTING

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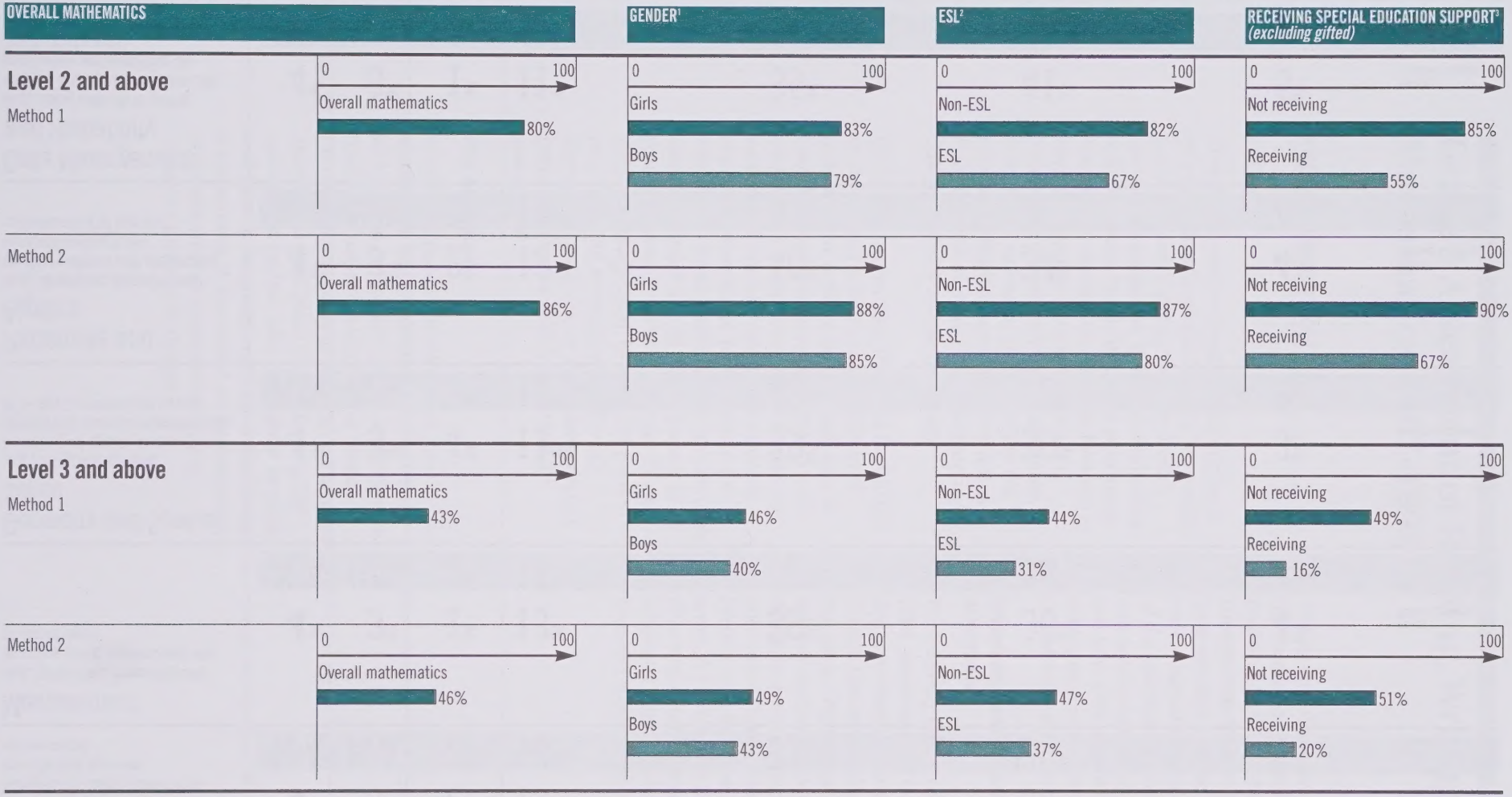
Mathematics Grade 3



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Mathematics strands Grade 3

Each strand identifies a key area of knowledge and skills in the mathematics curriculum

STRANDS	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
				the student demonstrates and communicates limited knowledge and understanding of the category	the student demonstrates and communicates some knowledge and understanding of the category	the student demonstrates and communicates general knowledge and understanding of the category	the student demonstrates and communicates in-depth knowledge and understanding of the category	
Number Sense and Numeration (e.g., adding, subtracting, multiplying and dividing whole numbers and using numbers to describe and represent relationships)	4%	3%	2%	15%	35%	36%	5%	Method 1: All Grade 3 students
	N/A	N/A	2%	16%	37%	39%	6%	Method 2: Excludes students in "exempt" and "no data" categories
Measurement (e.g., estimating, measuring and recording using standard and non-standard units)	4%	3%	1%	13%	39%	36%	4%	Method 1: All Grade 3 students
	N/A	N/A	2%	14%	42%	38%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Geometry and Spatial Sense (e.g., using and applying knowledge of spatial relationships to identify and describe characteristics of 2- and 3-dimensional figures)	4%	3%	4%	11%	39%	36%	3%	Method 1: All Grade 3 students
	N/A	N/A	5%	12%	42%	38%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Patterning and Algebra (e.g., identifying, extending and creating patterns with shapes and numbers leading to an understanding of algebra)	4%	3%	2%	13%	40%	34%	4%	Method 1: All Grade 3 students
	N/A	N/A	2%	14%	43%	37%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Data Management and Probability (e.g., using methods to gather, analyze, display and communicate information and predicting the likelihood of events)	4%	3%	1%	11%	35%	41%	5%	Method 1: All Grade 3 students
	N/A	N/A	2%	11%	37%	44%	6%	Method 2: Excludes students in "exempt" and "no data" categories

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Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

FRENCH IMMERSION

Context

French Immersion programs are common in school boards across Ontario. No specific provincial curriculum exists for French Immersion programs. Boards develop their own programs locally using the provincial curriculum documents that teachers use in English-language classrooms. French Immersion programs vary considerably from board to board, particularly in the amount of English-language instruction that students in these programs receive in different grades and subject areas.

Given this context and the need for further study to determine the best method of assessing the achievement of students in French Immersion programs, EQAO gave each school board the authority to decide whether its French Immersion students would be expected to participate in the 1997-1998 Grade 3 assessment. Boards were asked to choose one of three options: a) Students participate in the regular English-language assessment; b) Students participate in a pilot assessment for French Immersion students; or c) Students do not participate in the 1997-1998 Grade 3 assessment.

Pilot Assessment

EQAO's purpose in developing a pilot assessment was to obtain data that would be useful in determining a fair and effective method of assessing students in French Immersion programs in the future. The pilot assessment took place during the regular assessment period. Like the regular English- and French-language versions of the Grade 3 assessment, it was based on the language and mathematics expectations in the *Ontario Curriculum: Grades 1–8.*

During the pilot assessment, students did the reading and writing components in English and they did the mathematics components in French. The questions in the mathematics portion of the assessment were adapted French-language translations of the questions developed for the English-language assessment. EQAO provided the teachers who were administering the pilot assessment with a bilingual glossary of mathematical terms to share with students.

Interpreting Student Results from the Pilot Assessment

In reviewing how students achieved on the pilot assessment, it is important to consider the considerable variation that exists in French Immersion programs across the province. Depending on where they go to school, students enter French Immersion in different grades, they receive different amounts of instruction in English and French, and they cover different subject areas in French and English. Given this diversity, determining how best to assess students' achievement will require considerable research and consultation.

Mathematics Grade 3 (French Immersion)[1]

KNOWLEDGE/SKILLS CATEGORIES	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
Problem Solving Chooses and carries out strategies and applies them correctly				uses a few simple strategies that rarely lead to accurate solutions	uses some appropriate strategies that sometimes lead to accurate solutions	generally uses appropriate strategies that usually lead to accurate solutions	uses appropriate and innovative strategies that lead to accurate solutions	
	2%	8%	2%	21%	33%	31%	3%	Method 1: All Grade 3 students
	N/A	N/A	2%	23%	37%	35%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Understanding of Concepts Uses and explains required concepts and incorporates mathematical ideas and relationships				uses a few required concepts and gives inappropriate and/or incomplete explanations	uses some required concepts and gives appropriate but incomplete explanations	uses most required concepts and gives appropriate and complete explanations	uses all required concepts and gives appropriate and complete explanations in various contexts	
	2%	8%	2%	14%	31%	40%	3%	Method 1: All Grade 3 students
	N/A	N/A	3%	15%	35%	44%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Application of Mathematical Procedures Selects and accurately applies procedures (e.g., making a graph) and operations (e.g., adding and multiplying)				applies a few simple procedures and operations with major errors/omissions	applies some of the appropriate procedures and operations with several minor errors/omissions	applies most of the appropriate procedures and operations with few minor errors/omissions	applies the required procedures and operations, rarely with any errors/omissions	
	2%	8%	1%	15%	30%	41%	3%	Method 1: All Grade 3 students
	N/A	N/A	1%	16%	34%	46%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Communication of Required Knowledge Uses clear explanations and correct mathematical terms and symbols; justifies reasonableness of solutions				rarely uses mathematical language; gives unclear and/or imprecise justifications	sometimes uses correct and appropriate mathematical language; gives justifications that are somewhat clear and precise	usually uses correct and appropriate mathematical language; gives generally clear and precise justifications	uses a range of correct and appropriate mathematical language; gives clear and precise justifications	
	2%	8%	4%	28%	35%	21%	2%	Method 1: All Grade 3 students
	N/A	N/A	5%	32%	38%	23%	2%	Method 2: Excludes students in "exempt" and "no data" categories
Overall Level of Achievement in Mathematics (Based on Knowledge/Skills Categories only)				demonstrates and communicates limited knowledge and understanding in mathematics	demonstrates and communicates some knowledge and understanding in mathematics	demonstrates and communicates general knowledge and understanding in mathematics	demonstrates and communicates in-depth knowledge and understanding in mathematics	
	2%	8%	5%	14%	29%	39%	3%	Method 1: All Grade 3 students
	N/A	N/A	6%	16%	32%	43%	3%	Method 2: Excludes students in "exempt" and "no data" categories

REPORTING

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1. *These figures do not include the whole of the French Immersion population in Ontario, but refer only to those students who participated in the pilot assessment.*

Mathematics strands Grade 3 (French Immersion)[1]

Each strand identifies a key area of knowledge and skills in the mathematics curriculum

STRANDS	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
				the student demonstrates and communicates limited knowledge and understanding of the category	the student demonstrates and communicates some knowledge and understanding of the category	the student demonstrates and communicates general knowledge and understanding of the category	the student demonstrates and communicates in-depth knowledge and understanding of the category	
Number Sense and Numeration (e.g., adding, subtracting, multiplying and dividing whole numbers and using numbers to describe and represent relationships)	2%	8%	2%	19%	31%	34%	4%	Method 1: All Grade 3 students
	N/A	N/A	2%	21%	35%	37%	5%	Method 2: Excludes students in "exempt" and "no data" categories
Measurement (e.g., estimating, measuring and recording using standard and non-standard units)	2%	8%	2%	18%	33%	34%	3%	Method 1: All Grade 3 students
	N/A	N/A	1%	20%	37%	38%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Geometry and Spatial Sense (e.g., using and applying knowledge of spatial relationships to identify and describe characteristics of 2- and 3-dimensional figures)	2%	8%	6%	17%	34%	31%	2%	Method 1: All Grade 3 students
	N/A	N/A	7%	19%	37%	34%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Patterning and Algebra (e.g., identifying, extending and creating patterns with shapes and numbers leading to an understanding of algebra)	2%	8%	1%	14%	34%	38%	3%	Method 1: All Grade 3 students
	N/A	N/A	1%	16%	37%	42%	4%	Method 2: Excludes students in "exempt" and "no data" categories
Data Management and Probability (e.g., using methods to gather, analyze, display and communicate information and predicting the likelihood of events)	2%	8%	2%	15%	30%	39%	4%	Method 1: All Grade 3 students
	N/A	N/A	2%	17%	33%	44%	4%	Method 2: Excludes students in "exempt" and "no data" categories

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1. *These figures do not include the whole of the French Immersion population in Ontario, but refer only to those students who participated in the pilot assessment.*

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about the Learning Environment

There is assessment support for teachers in most schools and school boards in the province.

- 99% said that the *Ontario Curriculum* documents are available in classrooms to assist teachers. Last year this percentage was 92.
- 88% of principals indicated that assessment materials are available to assist teachers.
- 89% indicated that board resource personnel are available to assist teachers in assessment. Last year this percentage was 79.
- 73% indicated that a board-wide assessment plan is in place.
- 73% indicated that a school-wide assessment plan is in place. Last year this percentage was 64.

Grade 3 teachers are experienced educators who have engaged in professional development.

- Almost half of the Grade 3 teachers have taught in the primary division for 10 or more years, and 18% of them have taught Grade 3 for 10 or more years. 56% have been teaching for 10 years or more.
- Most Grade 3 teachers reported having taken professional development courses, attended workshops or done professional reading with a focus on teaching or assessing reading, writing or mathematics.

Parents are involved and satisfied with the contact that they have with their child's school.

- 97% of the parents read school newsletters and brochures.
- 98% review their child's report card.
- 87% speak or write to their child's teacher or principal.
- 51% of the parents indicated being involved with their child's school.
- At least 83% are satisfied or very satisfied with the way information is communicated about their child's achievement in reading, writing and mathematics.

There is support for student learning in most homes.

- 99% of the parents indicated that there are writing materials available at home; 86% of homes have calculators, 62% have more than 100 books or other publications and 66% have a computer.
- Many parents assist their child with reading: 75% listen to their child read at least a few times a week, 71% talk to their child about what he or she has read at least a few times a week, 77% encourage their child to read materials that are not part of school work at least a few times a week, and 56% read to their child at least a few times a week.
- Many parents assist their child with writing: 77% listen to what their child has written at least a few times a week, 76% talk to their child about what he or she has written at least a few times a week, and 55% encourage their child to write in addition to school work at least a few times a week.
- Many parents assist their child with mathematics: 79% help their child to understand number questions at least a few times a week, 72% help their child solve mathematical problems at least a few times a week, 55% encourage their child to do mathematics that is not school work at least a few times a week.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

Primary teachers meet regularly to discuss curriculum and/or assessment.

- 72% of the Grade 3 teachers meet with other divisional teachers to plan or discuss curriculum and assessment at least once a month; 42% meet at least every two weeks.

Teachers place a high priority on implementing the *Ontario Curriculum.*

- 90% of the teachers indicated that implementing the new language curriculum is a high priority, and 91% indicated the same for the new mathematics curriculum.

Grade 3 teachers regularly use a variety of genres and strategies for teaching reading.

- 95% of the Grade 3 teachers have students read stories at least a few times a week; 92% have them read instructions at least a few times a week; and 56% have them read diaries or journals at least a few times a week.
- 83% have students read informative articles at least a few times a month; 72% have them read poetry at least a few times a month; and 49% have them read letters at least a few times a month.
- At least two-thirds of the teachers have students do the following activities a few times a week: increase vocabulary by building on words in their reading (74%), read aloud to the class (81%), define words from their reading (74%), read aloud to the teacher (66%), talk about books they had read (64%).
- The vast majority of the teachers teach their students the following strategies for reading at least a few times a month: phonics cues (96%), punctuation cues (95%), syntax and grammar cues (92%) and context cues (94%).

Grade 3 teachers regularly use a variety of genres and strategies for teaching writing.

- 69% of the Grade 3 teachers have students write journal entries at least a few times a week; 53% have them write stories at least a few times a week.
- Other genres are used by many teachers but less frequently: writing to give information (70% at least a few times a month); letters (50% at least a few times a month); instructions (49% at least a few times a month); and poetry (46% at least a few times a month).
- Most teachers have students use the stages of the writing process at least a few times a month: pre-writing (88%), revising (90%), editing (93%) and publishing (77%).
- At least a few times a week, more than two-thirds of the teachers stated they teach their students spelling (82%), basic punctuation (77%) and grammar (69%).

Grade 3 teachers regularly use a variety of genres and strategies for teaching mathematics.

- 69% of the teachers reported teaching the appropriate use of mathematical forms and symbols at least a few times a week, and 69% reported teaching mathematical methods or procedures at least a few times a week.
- 66% of the teachers have students use concrete materials to understand new concepts at least a few times a week; 62% have them apply mathematical rules within real-life or authentic contexts at least a few times a week; 56% have them use problem-solving strategies to find answers at least a few times a week; 54% have them discuss their problem-solving choices with the class at least a few times a week; and 48% have them communicate solutions in a precise and mathematical way at least a few times a week.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

- Other instructional strategies are used by many teachers less frequently: working collaboratively to solve problems (75% at least a few times a month), solving open-ended problems (64% at least a few times a month), mathematical investigations (59% at least a few times a month).

Teachers indicated that they are somewhat comfortable or very comfortable with teaching reading, writing and mathematics.

- Reading: reasoning (75%), communication (78%), organization of ideas (65%) and application of language conventions (72%).
- Writing: reasoning (76%), communication (72%), organization of ideas (73%) and application of language conventions (78%).
- Mathematics: number sense and numeration (88%), geometry and spatial sense (75%), measurement (80%), patterning and algebra (67%), data management and probability (60%), problem solving (64%), understanding of concepts (75%), application of mathematical procedures (70%) and communication of required knowledge related to concepts, procedures and problem solving (58%).

Most teachers spend at least 40 minutes a day on each of reading, writing and mathematics.

- 87% of teachers spend more than 40 minutes a day on reading-related activities.
- 75% of teachers spend more than 40 minutes a day on writing-related activities.
- 84% of teachers spend more than 40 minutes a day on mathematics-related activities.

Teachers attend mostly school-based or board-level workshops for professional development in reading, writing and mathematics.

- Only 34% visit other classrooms for professional development.
- Under 20% attend conferences outside the board.
- Under 15% take university or community college courses.

Teachers use reading strategies that promote higher-order thinking infrequently.

- 42% have students solve problems by combining information from their reading with their own experience a few times a week or more.
- 34% teach students to recognize various levels of meaning within a text a few times a week or more.
- 36% teach students to recognize elements of style in their reading a few times a week or more.
- 42% have students extend their response to reading through a variety of open-ended activities a few times a week or more.
- 57% have students evaluate ideas, information or actions from their reading a few times a week or more.

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

Teachers focus on writing for a purpose or an audience infrequently.

- 22% have students write for different audiences a few times a week or more.
- 29% have students write for different purposes a few times a week or more.

With the exception of number sense and numeration, many teachers do not use mathematics activities like those included in the assessment very frequently.

- Fewer than 25% of the teachers reported doing the kinds of tasks that were included in the assessment a few times a week or more (geometry, 12%; data management and probability, 16%; measurement, 23%; patterning and algebra, 23%).

Teachers use mathematics strategies that promote higher-order thinking infrequently.

- 13% have students engage in mathematics journal writing a few times a week or more.
- 20% have students invent or create problem-solving activities a few times a week or more.
- 28% have students conduct mathematical investigations a few times a week or more.
- 31% have students solve open-ended problems a few times a week or more.

Most teachers use a limited range of strategies to assess students' learning in reading, writing and mathematics.

- Of the 18 reading assessment strategies listed on the teacher questionnaire, only three are used by more than 50% of the teachers at least a few times a week or more: unrehearsed oral reading (56%), workbook exercises (53%) and personal response journals (51%).
- Of the 10 writing strategies listed, the only assessment approach that is used at least a few times a week or more by more than 50% of the teachers is writing assignments (52%).
- Of the 15 mathematics assessment strategies listed, the following are used at least a few times a week or more by more than 50% of the teachers: demonstrations with materials (60%), mental mathematics (57%) and observation notes and checklists (55%).

Teachers generally indicated discomfort with assessing students' achievement in reading, writing and mathematics.

- In reading, over one-third of the teachers are uncomfortable or only somewhat comfortable with assessing organization of ideas (38%), reasoning (33%), communication (32%) and application of language conventions (33%).
- In writing, almost one-third of the teachers are uncomfortable or only somewhat comfortable with assessing reasoning (29%) and communication (30%).
- In mathematics, over one-third of the teachers are uncomfortable or only somewhat comfortable with assessing patterning and algebra (31%), data management and probability (38%), problem solving (35%), application of procedures (30%) and communication (42%).

Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998

What EQAO Learned about Student Attitudes and Behaviour

Many Grade 3 students like reading, writing and mathematics.

- 70% of the students indicated that they like to read, 63% indicated that they like to write and 61% indicated that they like mathematics.

Many Grade 3 students read, write and do mathematics outside of their regular school work.

- 56% of the students read, 50% write, and 45% do mathematics that is not part of their school work.

READ OUTSIDE SCHOOL WORK

boys: 53%

girls: 64%

WRITE OUTSIDE SCHOOL WORK

boys: 53%

girls: 63%

MATH OUTSIDE SCHOOL WORK

boys: 45%

girls: 48%

Grade 9 Assessment of Mathematics: 1997-1998

Grade 9 Assessment of Mathematics: 1997-1998

General Information

- Administered May 1998
- Province-wide sample
- 5,900 students
- 160 teachers
- 240 classrooms
- 120 schools
- Five-day unit of work
- Students worked independently to solve problems and answer questions
- Based on the provincial curriculum
- Scored using four achievement levels
- *Provincial Report* released in October 1998

The Grade 9 mathematics assessment measured how well students had learned the knowledge and skills set out in the provincial mathematics curriculum. The assessment involved a province-wide sample of Grade 9 students. The sample was drawn from full-year and semester-two mathematics classes randomly selected from secondary schools throughout Ontario. The assessment took place from May 25 to 29, 1998, and was administered during five 60-minute periods.

Provincial secondary school reform will result in changes to the secondary curriculum in the fall of 1999. The 1997-1998 Grade 9 assessment was based on the provincial curriculum that was in place and will continue to be in place in 1998-1999. The assessment was an integrated unit that asked students to solve problems relevant to everyday life and to respond to short-answer and multiple-choice questions.

The assessment covered all five strands of mathematics: number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability. It required students to demonstrate their understanding of mathematical concepts by solving problems, applying procedures and explaining how they arrived at their answers.

Teams of classroom teachers developed the assessment in collaboration with EQAO's assessment and curriculum experts. The development teams recognized that the assessment had to be free of bias, had to appeal to a wide range of students and had to be appropriate for students with varying abilities and backgrounds. The assessment was field-tested in a cross-section of schools across Ontario.

Student work on the assessment was scored using a four-level scale that was developed using the provincial standards document (*Provincial Standards: Mathematics, Grades 1-9, 1995*).

As part of the Grade 9 assessment, EQAO asked students, parents, teachers and principals to complete detailed questionnaires. Their responses to the questionnaires are presented in this section to provide the reader with contextual information on factors associated with student achievement.

EQAO recognizes that students with special needs may require support in order to participate productively in an assessment. Teachers were able to assist such students by providing certain accommodations. For example, they could allow extra time, help students organize the activities, assist with pacing, provide a quiet work space, permit assistive devices, present the assessment tasks in a different format, or allow student to use various technological resources.

In a small number of cases, a student's special needs were such that the student was exempted from participation. The principal and teacher were able to exempt any student whose participation would have been non-productive or harmful. Before granting an exemption, school staff were required to consult with the student's parent(s) and obtain written parental consent.

All accommodations and exemptions were reported to EQAO.

What EQAO Learned about Achievement in Mathematics in Grade 9

(Refer to the charts on the following pages for detailed information.)

The Grade 9 assessment measured students' knowledge and skills in various ways. Performance-based tasks and short-answer questions allowed students to demonstrate how effectively they could apply their knowledge and skills to solve problems. Multiple-choice questions tested students' mastery of basic facts and concepts. EQAO calculated the overall achievement levels presented in the following tables by combining data from the tasks and questions.

LEVELS 2, 3 AND 4

56% of Grade 9 students achieved at Levels 2, 3 and 4 in Mathematics. These students demonstrate general to thorough understanding.

At Level 2, students demonstrate general understanding of some required concepts. They sometimes apply some of the required procedures to complete tasks accurately. They sometimes implement successful problem-solving strategies and are sometimes able to communicate ideas and processes clearly using everyday and mathematical language.

At Level 3, students demonstrate general understanding of most required concepts. They consistently apply most required procedures to complete most tasks accurately. They consistently implement successful problem-solving strategies and are able to communicate ideas and processes clearly and consistently using everyday and mathematical language.

At Level 4, students demonstrate thorough understanding of all required concepts. They apply a wide variety of procedures to complete all tasks accurately. They implement innovative and successful problem-solving strategies and communicate ideas and processes clearly and precisely using everyday and appropriate mathematical language.

LEVEL 1

21% of Grade 9 students achieved at Level 1 in Mathematics. These students demonstrate and communicate very limited knowledge and understanding of a few required concepts. They occasionally apply a few required procedures, rarely obtaining accurate solutions. They rarely implement successful problem-solving strategies and rarely communicate ideas and processes clearly.

MISSING

15% of the Grade 9 students in the province-wide sample were not included in this analysis. 13% produced insufficient information to be scored, and 2% were exempted from participating in the assessment.

Mathematics Grade 9

KNOWLEDGE/SKILLS CATEGORIES	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
Problem Solving Chooses models, tools, operations and strategies, applies them correctly and checks answers				rarely uses models, tools, operations and strategies that lead to accurate solutions	sometimes uses appropriate models, tools, operations and strategies that sometimes lead to accurate solutions	generally uses appropriate models, tools, operations and strategies that usually lead to accurate solutions	consistently uses appropriate and innovative models, tools, operations and strategies that lead to accurate solutions	
	2%	13%	6%	32%	30%	16%	2%	Method 1: All Grade 9 students
	N/A	N/A	6%	38%	35%	19%	2%	Method 2: Excludes students in "exempt" and "no data" categories
Understanding Mathematical Concepts Uses required concepts and incorporates mathematical ideas, relationships, properties and reasons for classifying in explanations				uses a few required concepts and gives inappropriate and/or incomplete explanations	uses some required concepts and gives appropriate but incomplete explanations	uses most required concepts and gives appropriate and complete explanations	uses all required concepts and gives appropriate and complete explanations in various contexts	
	2%	13%	5%	25%	31%	23%	2%	Method 1: All Grade 9 students
	N/A	N/A	6%	29%	36%	27%	2%	Method 2: Excludes students in "exempt" and "no data" categories
Applying Procedures Selects and uses appropriate operations, algorithms and rules to complete tasks with accuracy				selects and applies inexact and partial procedures with major errors/omissions	selects and applies some of the appropriate procedures with several minor errors/omissions	selects and applies most of the appropriate procedures with few minor errors/omissions	selects and applies all of the appropriate procedures, rarely with any errors/omissions	
	2%	13%	4%	26%	31%	23%	2%	Method 1: All Grade 9 students
	N/A	N/A	4%	30%	36%	27%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Communicating About Mathematics Describes, explains and justifies ideas and processes using everyday and mathematical language				rarely communicates the ideas and processes of mathematics clearly	sometimes communicates the ideas and processes of mathematics clearly	generally communicates the ideas and processes of mathematics clearly	consistently communicates the ideas and processes of mathematics clearly and precisely	
	2%	13%	5%	24%	32%	19%	5%	Method 1: All Grade 9 students
	N/A	N/A	6%	28%	38%	23%	6%	Method 2: Excludes students in "exempt" and "no data" categories
Overall Level of Achievement in Mathematics (Based on Knowledge/Skills Categories only)				demonstrates and communicates limited knowledge and skills in mathematics	demonstrates and communicates some knowledge and skills in mathematics	demonstrates and communicates general knowledge and skills in mathematics	demonstrates and communicates in-depth knowledge and skills in mathematics	
	2%	13%	8%	21%	31%	22%	3%	Method 1: All Grade 9 students
	N/A	N/A	9%	25%	36%	26%	4%	Method 2: Excludes students in "exempt" and "no data" categories

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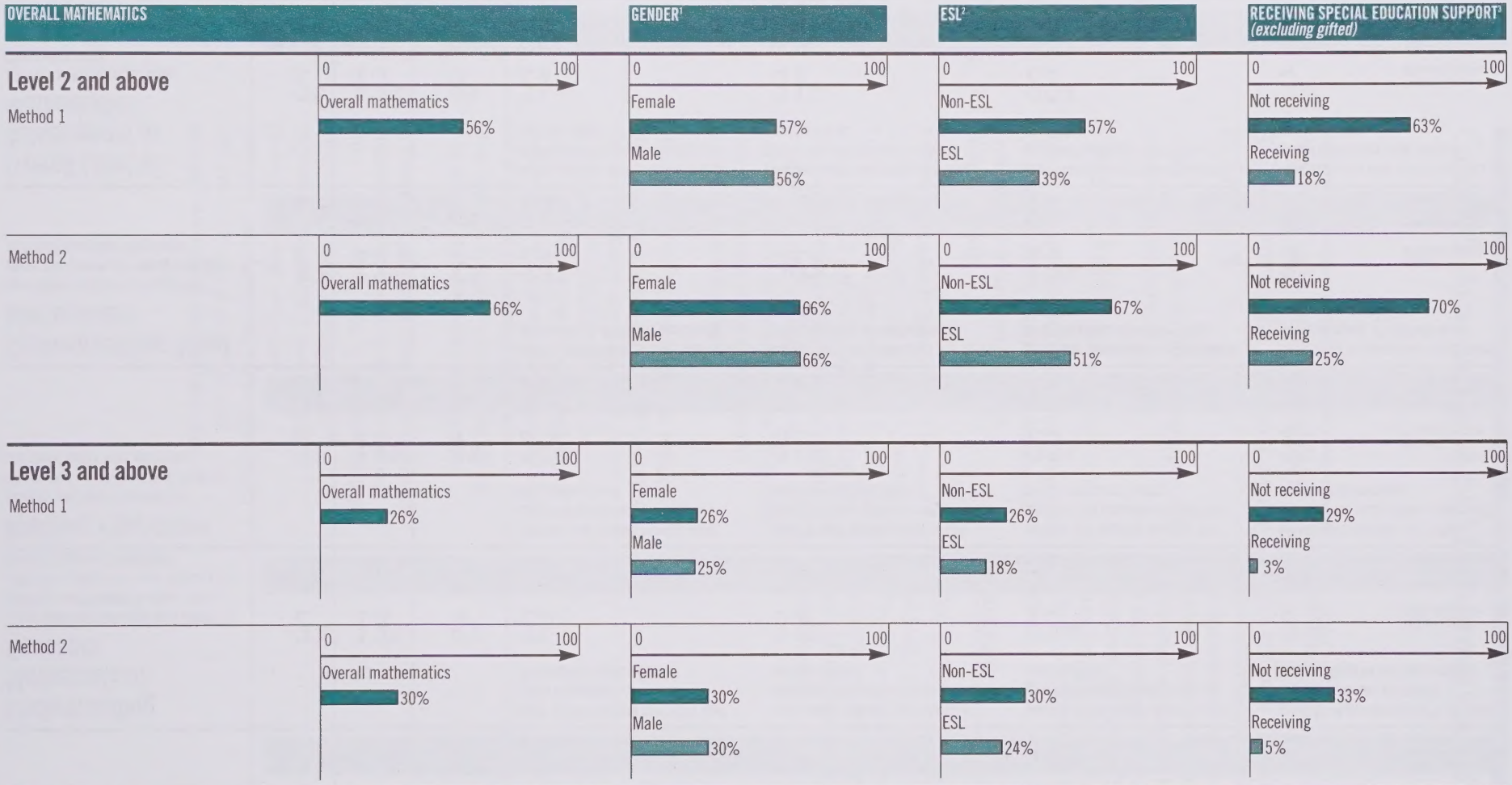
Mathematics Grade 9



1. *Gender differences may not be precise since gender was not specified for all students on the* Student Information Form.
2. *4% of the population were identified as English as a Second Language students.*
3. *14% of the population were receiving special education support.*

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Mathematics strands Grade 9

Each strand identifies a key area of knowledge and skills in the mathematics curriculum

STRANDS	EXEMPT	NO DATA	NOT ENOUGH INFORMATION TO SCORE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	
				the student demonstrates and communicates limited knowledge and understanding of the four mathematics components	the student demonstrates and communicates limited knowledge and understanding of the four mathematics components	the student demonstrates and communicates general knowledge and understanding of the four mathematics components	the student demonstrates and communicates in-depth knowledge and understanding of the four mathematics components	
Number Sense and Numeration (e.g., chooses tools for and operations with percents, integers, ratios, rates, powers, square roots and uses them in problem solving and estimation)	2%	13%	5%	23%	30%	24%	3%	Method 1: All Grade 9 students
	N/A	N/A	6%	27%	35%	28%	3%	Method 2: Excludes students in "exempt" and "no data" categories
Measurement (e.g., identifies, develops and applies procedures for a variety of measurement activities and reports results in appropriate units of measure)	2%	13%	8%	32%	26%	17%	2%	Method 1: All Grade 9 students
	N/A	N/A	10%	38%	30%	20%	2%	Method 2: Excludes students in "exempt" and "no data" categories
Geometry and Spatial Sense (e.g., uses and applies knowledge in transformational, coordinate, 2-D and 3-D geometries to describe spatial relationships and solve problems)	2%	13%	12%	39%	24%	9%	1%	Method 1: All Grade 9 students
	N/A	N/A	14%	46%	28%	11%	1%	Method 2: Excludes students in "exempt" and "no data" categories
Patterning and Algebra (e.g., uses algebraic notation and modelling to represent patterns and relationships and to solve problems)	2%	13%	10%	21%	28%	21%	6%	Method 1: All Grade 9 students
	N/A	N/A	12%	25%	32%	24%	7%	Method 2: Excludes students in "exempt" and "no data" categories
Data Management and Probability (e.g., gathers, organizes, analyzes, synthesizes information gathered from data from various sources and uses it to make decisions and presentations; uses probability to make decisions and solve problems)	2%	13%	5%	21%	25%	27%	7%	Method 1: All Grade 9 students
	N/A	N/A	6%	25%	30%	32%	8%	Method 2: Excludes students in "exempt" and "no data" categories

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Grade 9 Assessment of Mathematics: 1997-1998

What EQAO Learned about Students and Schools

- 63% of the sample of schools with Grade 9 mathematics classes were semestered schools; the remaining 36% had full-year programs.
- Approximately 30% of the schools in the sample had an enrollment below 1,000; 50% had an enrollment between 1,000 and 1,500; and 20% were larger than 1,500. The average school enrollment was approximately 1,181, and the average enrollment for Grade 9 was approximately 260.
- Approximately 10% of the Grade 9 mathematics classes had fewer than 20 students; 78% had between 20 and 30 students and 12% had over 30 students. The average class size was 25.
- 49% of the students in Grade 9 mathematics classes were girls and 50% were boys.
- Approximately 76% of students (and parents) indicated that they speak only or mostly English in the home, about 8% said only or mostly another language and 10% said "as often English as another language."
- 85% of the students were born in 1983 (15 years old), 7% were older and 1% were younger.
- 4% of the students were identified by their teacher as currently being in an English as a Second Language program.
- 12% of the students had been formally identified as exceptional and were receiving Special Education support; 3% of those were designated gifted.
- 7% of the students had *not* been formally identified but were receiving Special Education support; 2% were in enrichment programs, and 5% were receiving remedial support.
- 4% of the students were identified by their teachers as being in French Immersion.
- 2% of the students were exempted from the assessment.
- 5% of the students received permitted accommodations. The breakdown is as follows: 20% of the accommodations given were additional time for an independent task beyond the time given for that task, 24% for verbatim reading of the question, 18% for access to a quiet workplace removed from the classroom to complete the assignment, 13% for directions or prompts with respect to the pace of the activity.

What EQAO Learned about the Learning Environment

There is support for teachers in most schools and school boards to assist Grade 9 mathematics teachers in assessing students.

- 86% of principals indicated that assessment materials are available in the school library or resource centre.
- 77% indicated that board assessment resource personnel are available to assist teachers.
- 90% said that classroom assessment materials are available for assessing mathematics.
- 84% indicated that a school-wide assessment plan or policy is available.
- Grade 9 mathematics teachers have been teaching for an average of 14 years. They have been teaching at the secondary level for an average of 13 years and have been teaching Grade 9 mathematics for an average of eight years.

Grade 9 Assessment of Mathematics: 1997-1998

- Over 70% of Grade 9 mathematics teachers have had professional development, including seminars, workshops, conferences and self-instruction or professional reading in theory and practice of mathematics instruction and assessment and evaluation of mathematics; fewer than 25% have engaged in graduate studies.
- Over 50% of teachers have extended their personal knowledge of mathematics instruction over the last two years through professional development such as school-based workshops or seminars (69%), board-level workshops or seminars, reading professional materials (83%) and working on collaborative studies or projects with colleagues (61%).
- Grade 9 mathematics teachers have completed or are presently working towards Additional Qualifications courses in mathematics part 1 and/or 2 (24%) and/or Specialist (29%), other Additional Qualifications with focus on mathematics (e.g., computers in the classroom) (17%) and specialized training courses with focus on mathematics (25%).

Learning mathematics is valued in the homes of Grade 9 mathematics students.

- 96% of the parents indicated that learning mathematics is important for their child.
- 80% of parents indicated that, considering their child's age, their child is good in math.

Parents are satisfied with the way information is communicated to them.

- 74% of the parents indicated that they are satisfied or very satisfied with the way information is communicated to them about their child's achievement in mathematics.

Parents, to be informed about school activities and their child's achievement, read school newsletters or brochures (86%), review reports or profiles with school-level assessment results and review their child's school report card (98%).

Most Grade 9 mathematics students have access to a computer at home.

- 82% of parents who responded to the survey indicated that their child has access to a computer at home.

Grade 9 mathematics teachers meet regularly to discuss curriculum and assessment.

- 75% of the teachers reported meeting with other teachers to plan or discuss curriculum at least once a month; 53% meet at least every two weeks.
- The high- and very-high-priority topics discussed at these meetings are program content (81%), student outcomes (59%) and individual student progress (58%).

Grade 9 mathematics teachers use a variety of strategies for teaching mathematics.

- At least a few times a week, 96% of the Grade 9 mathematics teachers teach mathematics procedures, 93% teach forms and symbols, 85% have students communicate solutions in a precise and mathematical way, 67% have them demonstrate a mathematical process for other students, 66% have them decide when calculators are appropriate and 59% have them apply mathematics concepts in real-life or authentic contexts.
- At least a few times a month, 82% have their students do both problem solving and collaborative problem solving and 79% have them discuss their strategies.

Grade 9 Assessment of Mathematics: 1997-1998

Grade 9 mathematics teachers are very comfortable both teaching and assessing mathematics.

- Teachers are very comfortable with teaching number sense and numeration (95%), geometry and spatial sense (87%), measurement (93%), patterning and algebra (90%), data management and probability (80%), mathematical concepts (84%), procedures (95%), problem solving (79%) and communication in mathematics (77%).
- Teachers are very comfortable with assessing all of the areas in mathematics, except mathematical communication: number sense and numeration (91%), geometry and spatial sense (80%), measurement (89%), patterning and algebra (87%), data management and probability (78%), mathematical concepts (76%), procedures (90%), problem solving (77%) and communication (65%).

Most Grade 9 teachers assign one to three hours of homework a week.

- 35% of teachers indicated they assign one to two hours of mathematics homework a week, and 44% said they assign two to three hours a week.

There are a number of valuable teaching strategies that Grade 9 mathematics teachers are *not* using very frequently.

- 51% of the Grade 9 mathematics teachers never have their students use a computer, and 34% have them use a computer only a few times a year.
- 38% of the teachers regularly (more than a few times a month) have their students engage in solving the kind of open-ended problems that occur in the real world.
- The majority of the teachers never or only a few times a year have their students engage in the kind of reflective activities (mathematics journals (78%) and conferences with teachers (60%)), that help teachers work with students to identify their level of understanding.

Grade 9 mathematics teachers use a limited range of assessment strategies on a regular basis.

- The most frequent kinds of assessment used by the teachers (at least a few times a month) are chapter tests from textbooks (89%), mini-tests (82%), presentation of solutions to mathematics problems (75%) and mental mathematics (68%).
- None of the other assessment procedures are used regularly (a few times monthly or more) by teachers: conferencing (32%), dated work samples (33%), demonstration with materials (42%), computer work (43%) and investigations (39%). Projects, journals, rating scales, self-assessment, peer assessment, open-ended questions and construction of models were used by teachers infrequently.

In many schools, it is not easy to gain access to computers.

- 53% of the teachers indicated that it is sometimes difficult to use computers in the school, and 8% said that no computer is available for them to use in the school.

Parents of Grade 9 students rarely help their children with mathematics homework or encourage them to use mathematics outside school.

- 42% of the parents who responded indicated that they help their child with mathematics homework less than a few times a month, and 30% said they never do.

- 69% of parents said that they encourage their child to use mathematics beyond school less than a few times a month, and 20% said they never do.

More women than men are teaching Grade 9 mathematics in the sample schools.

- 46% of the teachers are men and 54% are women.

What EQAO Learned about Student Attitudes and Behaviour

Most Grade 9 mathematic students like mathematics, at least sometimes.

- 30% of students indicated "yes" they like mathematics and 40% indicated "sometimes."

Most Grade 9 mathematics students think they are good at mathematics.

- 34% of the student indicated "yes" they were good at mathematics and 47% indicated "sometimes."

Most Grade 9 mathematics students use mathematical problem solving outside school.

- 31% of the student indicated "yes" they use mathematical problem solving outside school and 48% indicated "sometimes."

Computers are not being used in Grade 9 mathematics classrooms.

- 75% of students indicated that they do *not* use computers in their mathematics classes.

SAIP Activities 1997-1998

School Achievement Indicators Program

SAIP Activities 1997-1998

School Achievement Indicators Program

Mathematics: Content and Problem Solving for 13- and 16-Year-Old Students

- Administered in 1997
- Ontario random sample of about 7,200 students (English and French)
- Student achievement described by five performance levels, Level 5 being the highest and Level 1 the lowest
- Developed by British Columbia, New Brunswick, Ontario, and Quebec
- Reports released in February 1998

The SAIP Mathematics assessment, coordinated by the Council of Ministers of Education, Canada (CMEC), is part of an ongoing national program to assess the achievement of 13- and 16-year-old students in mathematics, reading, writing and science. The program was designed to provide information about student achievement at the national and the provincial and territorial levels.

What EQAO Learned about Mathematics Achievement

(See tables on following pages for overall mathematics results.)

13-year-olds

(Expected level of performance: Level 2)

- On the content and problem-solving components, Ontario English and French girls performed as well as boys.

16-year-olds

(Expected level of performance: Level 3)

- On the content and problem-solving components, Ontario English and French girls performed as well as boys.
- On both the content and problem-solving components, Ontario English and French 13- and 16-year-olds' results were lower than the results for Canada overall.
- Ontario English and French 13- and 16-year-olds performed lower than Canadian students overall on each of the four mathematics content strands (numbers and operations, algebra and functions, measurement and geometry, and data management and statistics).
- On the content component, about 50% of Ontario English and 52% of Ontario French 13-year-olds attained Level 2 and above, and about 52% of Ontario English and 49% of Ontario French 16-year-olds attained Level 3 and above.
- On the problem-solving component, about 45% of Ontario English and 43% of Ontario French 13-year-olds attained Level 2 and above, and about 33% of Ontario English and 28% of Ontario French 16-year-olds attained Level 3 and above.

SAIP Activities 1997-1998

School Achievement Indicators Program

Mathematics: Content and Problem Solving for 13- and 16-Year-Old Students

Notes:
Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and most 16-year-olds would meet the criteria for Level 3.

The groupings take sampling error and confidence intervals into account. For each population, the percentage of students achieving at Level 2 and above (13-year-olds) and Level 3 and above (16-year-olds) is shown together with the sampling error (in parentheses) for each statistic. If the sampling error is added to and subtracted from the percentage, this provides the "confidence interval."

Definition of "Confidence Interval"
Just as in a poll, the percentages were calculated from the results of random samples of students, and therefore are only estimates of the actual achievement students would have demonstrated had all of a jurisdiction's students at a given age/grade taken the test. Because an estimate is rarely exact, it is common practice to provide a range of percentages within which the actual achievement results might fall. This range of percentages is called a "confidence interval" and represents the high- and low-end points between which the actual achievement results should fall 95% of the time (or 19 times out of 20).

Provinces and Territories Compared with Ontario

MATHEMATICS CONTENT

Proportion of 13-year-olds attaining Level 2 and above

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Alberta	64.7%	(±3.0)	Manitoba (English)	51.9%	(±3.3)	Northwest Territories	31.4%	(±4.2)
British Columbia	56.9%	(±3.0)	New Brunswick (English)	54.6%	(±3.3)			
Canada	59.4%	(±0.8)	Nova Scotia (English)	53.0%	(±3.3)			
Manitoba (French)	61.9%	(±3.2)	Ontario (English)	50.0%	(±3.1)			
New Brunswick (French)	63.2%	(±3.0)	Ontario (French)	51.9%	(±3.0)			
Newfoundland	56.9%	(±3.3)	Prince Edward Island	53.6%	(±3.2)			
Nova Scotia (French)	66.0%		Saskatchewan	47.9%	(±3.2)			
Quebec (English)	65.3%	(±3.3)						
Quebec (French)	78.3%	(±2.6)						
Yukon	65.4%	I(±5.2)						

MATHEMATICS CONTENT

Proportion of 16-year-olds attaining Level 3 and above

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Alberta	61.4%	(±3.2)	British Columbia	54.6%	(±3.2)	Newfoundland	43.0%	(±3.4)
Canada	59.8%	(±0.9)	Manitoba (English)	53.4%	(±3.5)	Northwest Territories	37.8%	(±5.8)
Manitoba (French)	61.2%	(±5.5)	New Brunswick (English)	47.3%	(±3.5)			
New Brunswick (French)	63.4%	(±3.2)	Nova Scotia (English)	57.3%	(±3.5)			
Nova Scotia (French)	76.1%		Ontario (English)	52.0%	(±3.2)			
Quebec (English)	74.3%	(±3.2)	Ontario (French)	49.2%	(±3.3)			
Quebec (French)	81.0%	(±2.7)	Prince Edward Island	48.5%	(±3.6)			
			Saskatchewan	50.0%	(±3.3)			
			Yukon	59.2%	(±7.7)			

SAIP Activities 1997-1998

School Achievement Indicators Program

Mathematics: Content and Problem Solving for 13- and 16-Year-Old Students

Notes:
Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and most 16-year-olds would meet the criteria for Level 3.

The groupings take sampling error and confidence intervals into account. For each population, the percentage of students achieving at Level 2 and above (13-year-olds) and Level 3 and above (16-year-olds) is shown together with the sampling error (in parentheses) for each statistic. If the sampling error is added to and subtracted from the percentage, this provides the "confidence interval."

Definition of "Confidence Interval"
Just as in a poll, the percentages were calculated from the results of random samples of students, and therefore are only estimates of the actual achievement students would have demonstrated had all of a jurisdiction's students at a given age/grade taken the test. Because an estimate is rarely exact, it is common practice to provide a range of percentages within which the actual achievement results might fall. This range of percentages is called a "confidence interval" and represents the high- and low-end points between which the actual achievement results should fall 95% of the time (or 19 times out of 20).

Provinces and Territories Compared with Ontario

MATHEMATICS PROBLEM SOLVING

Proportion of 13-year-olds attaining Level 2 and above

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Alberta	57.8%	(±3.1)	British Columbia	47.8%	(±3.1)	Northwest Territories	27.5%	(±4.1)
Canada	52.2%	(±0.9)	Manitoba (English)	45.2%	(±3.3)			
Manitoba (French)	52.1%	(±3.3)	New Brunswick (English)	47.2%	(±3.3)			
New Brunswick (French)	53.2%	(±3.1)	Newfoundland	43.6%	(±3.3)			
Nova Scotia (French)	48.1%		Nova Scotia (English)	46.0%	(±3.3)			
Quebec (English)	57.9%	(±3.4)	Ontario (English)	45.4%	(±3.1)			
Quebec (French)	66.8%	(±3.0)	Ontario (French)	43.0%	(±3.0)			
Saskatchewan	51.2%	(±3.2)	Prince Edward Island	49.3%	(±3.2)			
			Yukon	40.7%	(±5.2)			

MATHEMATICS PROBLEM SOLVING

Proportion of 16-year-olds attaining Level 3 and above

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Alberta	44.8%	(±3.3)	British Columbia	31.2%	(±3.0)	Northwest Territories	18.5%	(±4.8)
Canada	39.8%	(±0.9)	New Brunswick (English)	33.6%	(±3.3)			
Manitoba (English)	40.2%	(±3.5)	New Brunswick (French)	37.1%	(±3.2)			
Manitoba (French)	45.3%	(±5.5)	Newfoundland	30.8%	(±3.2)			
Nova Scotia (French)	44.2%		Nova Scotia (English)	36.8%	(±3.5)			
Quebec (English)	46.5%	(±3.6)	Ontario (English)	33.0%	(±3.0)			
Quebec (French)	57.0%	(±3.4)	Ontario (French)	27.8%	(±3.0)			
Saskatchewan	38.6%	(±3.3)	Prince Edward Island	27.5%	(±3.2)			
			Yukon	30.8%	(±6.9)			

SAIP Activities 1997-1998

School Achievement Indicators Program

Mathematics: Content and Problem Solving for 13- and 16-Year-Old Students

What EQAO Learned about Attitudes and Behaviour

The following findings about attitudes, behaviour and the learning context relate to Ontario English students only. The findings for French students are presented in the French-language report.

- Many students (73% of 13-year-olds and 56% of 16-year-olds) reported they like mathematics.
- Many students (78% of 13-year-olds and 54% of 16-year-olds) reported they feel confident in doing mathematics questions.
- Generally, those students in both age groups who took full-year courses performed better than those who took semestered courses.
- Generally, those students who reported they spoke either English or French at home performed better than those who indicated they spoke another language at home.
- For both age groups, students who reported they like mathematics and feel confident in doing mathematics questions performed better than those who indicated they do not.
- The vast majority of 13-year-old students (93%) and 16-year-old students (85%) agreed they would have to be able to do mathematics to get a good job.
- The vast majority of 13-year-old students (95%) and 16-year-old students (88%) agreed that most people use mathematics in their jobs.
- Many students agreed that they need to be interested in mathematics to do well in the subject (13-year-olds, 65% and 16-year-olds, 75%).
- Many students agreed that they need to do lots of work at school to do well in the subject (13-year-olds, 64% and 16-year-olds, 73%).
- Many students agreed that they need to do lots of work at home to do well in the subject (13-year-olds, 51% and 16-year-olds, 67%).

What EQAO Learned about the Learning Context

- Approximately 66% of 13-year-olds and 72% of 16-year-olds reported their teachers show them how to do mathematics problems three or more times per week.
- Approximately 40% of 13-year-olds and 79% of 16-year-olds reported they copy notes from the blackboard three or more times per week.
- The vast majority of 13-year-olds (80%) and 16-year-olds (74%) reported they work on their own from worksheets or textbooks three or more times per week.
- Approximately one-third of students reported they never work in pairs or small groups (13-year-olds, 32% and 16-year-olds, 41%). About one-half of students reported working in pairs or small groups once or twice a week (13-year-olds, 50% and 16-year-olds, 44%).
- The majority of students (about 60% of both age groups) reported they never consult a teacher for additional help in mathematics outside of math class. Approximately one-third of students reported they consult a teacher for additional help once or twice per week.

SAIP Activities 1997-1998

School Achievement Indicators Program

Mathematics: Content and Problem Solving for 13- and 16-Year-Old Students

- Nearly one-half of students of both age groups (about 44%) reported they never consult other students for additional help in mathematics outside of math class. Similar numbers of students reported consulting other students for additional help once or twice per week.
- In large numbers (about 45% of 13-year-olds and 65% of 16-year-olds) students reported they never consult their parents or guardians for additional help in mathematics. Some students (about 41% of 13-year-olds and 27% of 16-year-olds) reported they consult their parents or guardians for additional help in mathematics once or twice per week.
- Nearly three-quarters of students (about 71% of 13-year-olds and 75% of 16-year-olds) reported they don't use computers for mathematics.
- The vast majority of students (about 77% of 13-year-olds and 92% of 16-year-olds) reported using a calculator for mathematics both at home and at school.

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

- Test was developed cooperatively by all countries involved
- Involved a total Ontario sample of 168 schools and 4,194 students
- Three sub-groups of students took part: sample of all students enrolled in their final year of secondary were tested in mathematics and science literacy, mathematics specialties, and physics specialties
- New Brunswick (English), Ontario (French and English), Alberta and British Columbia participated as provinces in the mathematics and science literacy component
- Ontario (French and English), Alberta and British Columbia participated as provinces in the advanced mathematics and physics studies
- The results were released in February 1998

TIMSS was the largest and most ambitious study of student achievement in mathematics and science ever conducted. The assessment, which was administered in the spring of 1995 under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), was designed to provide information about student achievement at the national level and at the provincial level (if provinces chose to involve sufficiently large school and student samples to report provincially). The main purpose of the assessment was to permit international comparisons of achievement, teaching methods and curriculum among the more than 40 participating countries.

What EQAO Learned about Achievement in Mathematics and Science Literacy

(See tables on following pages for detailed mathematics and science literacy results.)

- Ontario (English) students scored the same as the Canadian and higher than the international average overall.
- In mathematics and science literacy overall, only three jurisdictions (Netherlands, Sweden and Iceland) scored higher than Ontario.
- Ontario (French) students scored lower than the Canadian average. Although in mathematics literacy they scored the same as the international average, in science literacy they scored lower than the international average.
- Ontario (English and French) boys outperformed girls. (This finding was also true at the national and international levels.)

What EQAO Learned about Achievement in Advanced Mathematics

(See table on following pages for detailed advanced mathematics results.)

- Ontario (English and French) students scored the same as the Canadian and higher than the international average overall.
- Only one jurisdiction (France) scored higher than Ontario overall.
- In numbers and equations, Ontario (English and French) students scored the same as the Canadian and higher than the international average.
- In calculus, Ontario (English) students scored higher than the Canadian and international averages; Ontario (French) students scored the same as the Canadian and international averages.
- In geometry, Ontario (English and French) students scored the same as the Canadian and international averages.
- Ontario (English and French) boys outperformed girls. (This finding was also true at the national and international levels.)

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

What EQAO Learned about Achievement in Physics

(See tables on following pages for detailed physics results.)

- In physics as a whole, Ontario (English and French) students scored the same as the Canadian average.
- In mechanics, electricity and magnetism, and heat, Ontario (English and French) students scored the same as the Canadian average.
- In wave phenomena and modern physics, Ontario (English and French) students scored the same as the Canadian and international averages.
- In mechanics, Ontario (English) students scored the same as the international average.
- In electricity and magnetism, Ontario (French) students scored the same as the international average, and in heat, they scored higher than the international average.
- Ontario (English and French) students scored lower than the international average overall.
- Ontario (French) students scored lower than the international average in mechanics, and Ontario (English) students scored lower than the international average in electricity and magnetism.
- Ontario (English and French) boys outperformed girls. (This finding was also true at the national and international levels.)

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

Notes:
The mean scores presented here are not percentages: they are derived from internationally established scale scores, centred on a mean of 500 and a standard deviation of 100, divided by 10.

The groupings take standard errors (in parentheses) and confidence intervals into account.

Jurisdictions where student samples failed to meet international guidelines for participation are shown in italics.

"(E)" and "(F)" refer to English and French, respectively.

Comparisons of Jurisdictions with Ontario

MATHEMATICS AND SCIENCE LITERACY OVERALL

International Average: 50.0 (±0.1)
Canadian Average: 52.6 (±0.3)
Ontario Overall Average: 52.4 (±0.4)

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Iceland	54.1	(±0.2)	Alberta	52.7	(±1.4)	Cyprus	44.7	(±0.3)
Netherlands	55.9	(±0.5)	*Australia*	52.5	(±1.0)	Czech Republic	47.6	±1.1)
Sweden	55.5	(±0.4)	*Austria*	51.9	(±0.5)	*France*	50.5	(±0.5)
			British Columbia	51.7	(±0.4)	*Germany*	49.6	(±0.5)
			Canada	52.6	(±0.3)	Hungary	47.7	(±0.3)
			Denmark	52.8	(±0.3)	*Italy*	47.5	(±0.5)
			New Brunswick (E)	50.1	(±0.8)	Lithuania	46.5	(±0.6)
			New Zealand	52.5	(±0.5)	Ontario (F)	48.8	(±0.3)
			Norway	53.6	(±0.4)	Russian Federation	47.6	(±0.6)
			Ontario (E)	52.5	(±0.5)	*South Africa*	35.2	(±0.9)
			Slovenia	51.4	(±0.8)	*United States*	47.1	(±0.3)
			Switzerland	53.1	(±0.5)			

ADVANCED MATHEMATICS OVERALL

International Average: 50.0 (±0.1)
Canadian Average: 50.9 (±0.4)
Ontario Overall Average: 52.8 (±0.8)

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
France	55.7	(±0.4)	Alberta	52.5	(±0.9)	*Austria*	43.6	(±0.7)
			Australia	52.5	(±1.2)	British Columbia	47.1	(±0.6)
			Canada	50.9	(±0.4)	Czech Republic	46.9	(±1.1)
			Cyprus	51.8	(±0.4)	Germany	46.5	(±0.6)
			Denmark	52.2	(±0.3)	*Italy*	47.4	(±1.0)
			Greece	51.3	(±0.6)	*Slovenia*	47.5	(±0.9)
			Lithuania	51.6	(±0.3)	*United States*	44.2	(±0.6)
			Ontario (E)	52.8	(±0.8)			
			Ontario (F)	51.3	(±0.5)			
			Russian Federation	53.3	(±1.1)			
			Sweden	51.2	(±0.4)			
			Switzerland	53.3	(±0.5)			

Notes:

The mean scores presented are not percentages; they are derived from internationally established scale scores, centred on a mean of 500 and a standard deviation of 100, divided by 10.

The groupings take standard errors (in parentheses) and confidence intervals into account.

Jurisdictions where student samples failed to meet international guidelines for participation are shown in italics.

"(E)" and "(F)" refer to English and French, respectively.

Comparisons of Jurisdictions with Ontario

PHYSICS OVERALL

International Average: 50.0 (±0.1)
Canadian Average: 48.5 (±0.3)
Ontario Average : 48.4 (±0.5)

JURISDICTIONS SCORING HIGHER THAN ONTARIO			JURISDICTIONS SCORING THE SAME AS ONTARIO			JURISDICTIONS SCORING LOWER THAN ONTARIO		
Australia	51.8	(±0.6)	Alberta	49.7	(±0.7)	*Austria*	43.5	(±0.6)
British Columbia	51.2	(±0.6)	Canada	48.5	(±0.3)	Czech Republic	45.1	(±0.6)
Denmark	53.4	(±0.4)	Cyprus	49.4	(±0.6)	*United States*	42.3	(±0.3)
Germany	52.2	(±1.2)	France	46.6	(±0.4)			
Norway	58.1	(±0.7)	Greece	48.6	(±0.6)			
Russian Federation	53.2	(±1.5)	Latvia	48.8	(±2.2)			
Sweden	57.3	(±0.4)	Ontario (E)	48.5	(±0.5)			
			Ontario (F)	48.0	(±0.6)			
			Slovenia	52.3	(±1.6)			
			Switzerland	48.8	(±0.4)			

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

What EQAO Learned about Student Attitudes and Behaviour

The following findings about student attitudes and behaviour, and the learning context relate to Ontario English students only. The findings for French students are presented in the French-language report. Data are reported by the test component in which students participated (i.e., Mathematics and Science Literacy, Advanced Mathematics or Physics).

- Most students agreed/strongly agreed that they enjoy learning mathematics:

Mathematics and Science Literacy	66%
Advanced Mathematics	88%
Physics	86%

- The vast majority of students agreed/strongly agreed that mathematics is important to everyone's life:

Mathematics and Science Literacy	92%
Advanced mathematics	90%
Physics	92%

- Many students reported they enjoy learning science. The percentages of students who reported they like science or like it a lot, varied by field:

	Biology	Chemistry	Earth Science	Physics
Mathematics and Science Literacy	58%	44%	55%	38%
Advanced Mathematics	66%	68%	57%	64%
Physics	67%	71%	55%	71%

- Many students reported spending little or no time reading a book for enjoyment before or after school on a normal school day:

	No Time	Less than 1 Hour	1–2 Hours	3 or More Hours
Mathematics and Science Literacy	39%	38%	19%	4%
Advanced Mathematics	38%	44%	16%	2%
Physics	35%	45%	17%	3%

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

- Many students reported watching modest amounts of television and videos before or after school on a normal school day:

	No Time	Less than 1 Hour	1–2 Hours	3 or More Hours
Mathematics and Science Literacy	10%	31%	43%	16%
Advanced Mathematics	9%	36%	42%	13%
Physics	10%	36%	42%	12%

- Many students reported they spend three hours a week or more at a paid job:

Mathematics and Science Literacy	58%
Advanced Mathematics	47%
Physics	51%

- Many students reported spending a modest amount of time with friends outside of school on a normal school day:

	No Time	Less than 1 Hour	1–2 Hours	3 or More Hours
Mathematics and Science Literacy	11%	26%	37%	26%
Advanced Mathematics	16%	35%	35%	14%
Physics	18%	35%	36%	11%

- Most students agreed/strongly agreed that to do well in mathematics you need lots of natural ability and lots of hard work studying at home:

	Natural Ability	Good Luck	Hard Work	Memorize Text/Notes
Mathematics and Science Literacy	75%	16%	94%	43%
Advanced Mathematics	74%	23%	92%	29%
Physics	73%	20%	90%	29%

- Most students agreed/strongly agreed that to do well in science you need lots of natural ability, lots of hard work studying at home, and to memorize the textbook or notes:

	Natural Ability	Good Luck	Hard Work	Memorize Text/Notes
Mathematics and Science Literacy	70%	18%	95%	71%
Advanced Mathematics	70%	17%	96%	69%
Physics	71%	19%	95%	66%

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

What EQAO Learned about the Learning Context

- The vast majority of students reported that in at least some of their mathematics and science lessons they are asked to explain the reasoning behind an idea:

Mathematics and Science Literacy	
(math lessons)	86%
(science lessons)	94%
Advanced Mathematics	
(math lessons)	87%
(science lessons)	94%
Physics	
(math lessons)	88%
(science lessons)	94%

- The vast majority of students reported that in at least some of their mathematics and science lessons they are asked to work on problems for which there is no obvious method of solution:

Mathematics and Science Literacy	
(math lessons)	89%
(science lessons)	87%
Advanced Mathematics	
(math lessons)	93%
(science lessons)	91%
Physics	
(math lessons)	94%
(science lessons)	92%

- Most students reported that in at least some of their mathematics lessons they are asked to practise computational skills:

Mathematics and Science Literacy	69%
Advanced Mathematics	68%
Physics	69%

- The vast majority of students reported that in at least some of their science lessons they are asked to write explanations about what was observed and why it happened:

Mathematics and Science Literacy	97%
Advanced Mathematics	96%
Physics	95%

- The vast majority of students reported that in at least some of their mathematics and science lessons they are asked to apply mathematics to everyday problems:

Mathematics and Science Literacy	
(math lessons)	87%
(science lessons)	94%
Advanced Mathematics	
(math lessons)	87%
(science lessons)	95%
Physics	
(math lessons)	85%
(science lessons)	95%

- The vast majority of students reported that in at least some of their science lessons they are asked to conduct laboratory experiments:

Mathematics and Science Literacy	95%
Advanced Mathematics	93%
Physics	93%

- The vast majority of students reported that in at least some of their science lessons they are asked to collect and organize data in the classroom or laboratory:

Mathematics and Science Literacy	95%
Advanced Mathematics	93%
Physics	92%

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

- Some students reported that in their mathematics lessons they are never or almost never asked to explain the reasoning behind an idea:

Mathematics and Science Literacy	14%
Advanced Mathematics	13%
Physics	12%

- Some students reported that in their mathematics lessons they are never or almost never asked to practise computational skills:

Mathematics and Science Literacy	31%
Advanced Mathematics	32%
Physics	31%

- Some students reported that in their mathematics lessons they are never or almost never asked to apply mathematics to everyday problems:

Mathematics and Science Literacy	13%
Advanced Mathematics	13%
Physics	15%

- Most students reported they were born in Canada:

Mathematics and Science Literacy	83%
Advanced Mathematics	64%
Physics	67%

- Most students reported they always or almost always speak English at home:

Mathematics and Science Literacy	86%
Advanced Mathematics	74%
Physics	70%

- The vast majority of student reported that homework is assigned to them at least three or four times a week:

Mathematics and Science Literacy	83%
Advanced Mathematics	97%
Physics	95%

TIMSS Activities 1997-1998

Third International Mathematics and Science Study

Written Component: Final Year of Secondary School (in Ontario, Students in Grade 12 and OAC)

TIMSS: ACTIONS TAKEN

EQAO has commissioned two research projects based on the TIMSS data. One study examined curriculum, teaching practices, teacher education, correlates of achievement and results achieved by students in French-language schools. As a result of this study, EQAO made numerous recommendations to various groups and organizations in the 1996-1997 *Provincial Report on Achievement.*

The second study provided a detailed profile of how Ontario students performed in mathematics and science. By examining student responses to test items, the researchers were able to pinpoint the approaches that Ontario students used to answer questions and the common types of errors or misconceptions they demonstrated in their work. This study identified helpful directions for instructional planning in mathematics and science.

The main research questions were:

- What areas of strength and areas of weakness were demonstrated by Ontario students?
- How well do students in Ontario understand concepts and skills measured by sets of the TIMSS achievement items?
- How well did students in the Ontario systems perform on test items?
- What types of approaches to answering the questions were successfully used by Ontario students?
- What types of errors and misconceptions did the students' work demonstrate?
- What implications do these findings have for instruction and program and curriculum planning in Ontario classrooms?

On the strength of this research, EQAO developed a series of resource materials to assist Ontario teachers in addressing areas where students' work demonstrated a lack of understanding or knowledge. These materials included four booklets on mathematics and science instruction for Grade 4, Grade 8 and secondary school teachers.

These teaching resource materials include information about Ontario students' learning strengths and weaknesses. They also describe effective teaching strategies and approaches and provide sample activities. EQAO will release the materials later this fall.

Using Provincial Assessment Results to Support Improvement

Using Provincial Assessment Results to Support Improvement

Everything about the EQAO assessments is designed to provide teachers, parents and the students with information and experiences that increase student learning, not just measure it. The next step is the crucial one, for teachers and for parents: using the information wisely to help students learn. Teachers and parents should be looking forward, not back, and asking the questions, "What's next?" and "How can we use this information to help this student progress?"

– Lorna Earl, Ph.D. Associate Professor, Ontario Institute for Studies in Education, University of Toronto (Formerly Director of Assessment, EQAO)

EQAO's work has had a significant impact on education in Ontario. After the first annual *Provincial Report on Achievement* was released last October, teachers and principals worked with parents and school councils to interpret province-wide assessment results, taking into account all the factors that contribute to achievement in their schools and the achievement data that teachers gather throughout the year. Together, teachers, principals and parents prepared action plans for improvement.

A similar process occurred at the board level. Staff shared student results with parents and members of the community and discussed constructive ways to respond. Boards and schools emphasized the important role that parents play in providing information about their children and supporting teachers' efforts to improve student learning.

In the 1996-1997 *Provincial Report*, EQAO made overall recommendations which identified directions for system-wide improvement. Using student results from the Grade 3 assessment of reading, writing and mathematics and the Grade 6 assessment of mathematics, EQAO also made specific recommendations that teachers and parents could implement almost immediately. Both the overall and specific recommendations have served as a starting point for focused discussion and planning. EQAO hopes that educators and parents will continue working with these recommendations as they respond to this year's assessment results. For easy reference, last year's recommendations for Grade 3 reading, writing and mathematics are reproduced as an appendix in this report.

Schools and boards have addressed many of the recommendations, integrating some into their existing improvement plans. The Ministry of Education and Training, the Ontario College of Teachers, faculties of education and the teachers' federations have also considered many of the recommendations. EQAO is engaged in ongoing work with each of these organizations.

Major changes have occurred in education over the past year, and it is important to evaluate the progress that has been made with this context in mind. Educators have been working to implement the new *Ontario Curriculum: Grades 1–8* that was introduced last fall. In addition, many Ontario school boards were amalgamated and are now in the process of harmonizing policies, strategies and procedures.

Province-wide assessment is successful when it stimulates discussions and actions that improve student learning. In preparing this year's *Provincial Report on Achievement*, EQAO staff studied a sample of school and board action plans to obtain some concrete illustrations of how province-wide testing is contributing to better learning and teaching. The action plans reflect the fact that schools and boards are at different stages in their implementation of the new curriculum and in their work to refine curriculum and instruction based on province-wide assessment data.

Using Provincial Assessment Results to Support Improvement

The following examples illustrate the range of ways in which schools and boards responded to last year's Grade 3 assessment results.

- In some schools, student results showed that principals and teachers needed to modify their programs in reading, writing and/or mathematics. Schools responded in various ways. They revised their programs, purchased new learning resources and/or established a better balance in the time allotted to teaching the various parts of the language and mathematics curricula.
- Many boards made it a priority to provide teachers in all schools with in-service support in particular subjects. For example, some organized workshops and follow-up sessions to ensure that one teacher per division per school could expand her or his instructional and assessment expertise and provide professional support to other teachers. Many boards and schools used data gathered through the teacher questionnaires to identify specific areas where teachers would benefit from additional professional development (e.g., reading strategies, the writing process and expanding the range of student writing and problem-solving activities).
- Schools have adopted both divisional and school-wide approaches to planning for improvement. Many have established teams that involve Grade 3 teachers, Grade 4 teachers, the principal, resource teachers and school council representatives. The teams have developed action plans that identify follow-up steps for Grade 4 teachers. Some school action plans outline activities that encourage increased parental involvement. For example, schools held "family math nights" and used the school newsletter to promote enjoyable and useful ways that parents could support reading and writing at home.

There is strong evidence of a growing culture of assessment in schools across Ontario. Teachers are taking advantage of formal and informal opportunities to expand their expertise in assessment. They have started to integrate the use of the curriculum-based assessment scales and samples of student work into their regular classroom activities. Many are using these resources in discussions with parents to clarify learning expectations and to explore the characteristics of student work at different levels.

Using Provincial Assessment Results to Support Improvement

1997-1998 Recommendations

The recommendations that follow are based on all of the assessment information presented in this report and build on the recommendations EQAO made last year. They take into account all that EQAO has learned about student achievement from province-wide, national and international assessments, from relevant research and from ongoing discussions with educators, parents, policy makers and members of the public. This year's report includes three general recommendations.

- The first asks boards and schools to identify the effective use of assessment information as a priority within their organizational planning and curriculum management programs.
- The second addresses the Grade 3 assessment results. It asks educators to review their language and mathematics programs in order to identify and address gaps in the implementation of the new *Ontario Curriculum: Grades 1–8*. It outlines specific recommendations for reading, writing and mathematics with actions that can be implemented by boards and schools and by teachers in individual classrooms.
- The third general recommendation addresses the Grade 9 assessment results. It discusses the need for students to have frequent opportunities to solve real-world problems in the secondary mathematics program. This recommendation also includes actions that can be taken by boards and schools and by teachers in individual classrooms.

Using Provincial Assessment Results to Support Improvement

Supporting a Culture of Assessment in Board and School Planning

Recommendation arising from Provincial, National and International Assessments

GENERAL RECOMMENDATION #1

That boards and schools identify the effective use of province-wide assessment information as a priority in their organizational planning and curriculum management programs.

Successful programs focus on comprehensive components of a problem, invest in capacity-building – that is, they work at increasing the ability of systems and people to do the job – and they stay at it over a period of time. This is a broad, not a short-term goal.

– Michael Fullan (1998)

Province-wide assessment of student achievement gives schools and school systems accurate and reliable data they can use to foster system-wide improvement and increased public accountability. By working together to interpret and use assessment data, students, teachers and parents can improve teaching and learning. Assessment information provides policy makers and members of the public with a solid foundation for evaluating how well students are acquiring the knowledge and skills they need to be successful at school and in every aspect of their lives.

Information from a variety of large-scale assessments is available to boards, including:

- Student achievement data from EQAO's province-wide assessments of students in Grades 3, 6 and 9.
- Information on the achievement of Ontario students in national and international assessments.
- Contextual and attitudinal data from province-wide, national and international assessments.

Recommended Actions:

Last year, EQAO recommended that educators and parents work together to create a culture in which assessment information is viewed as useful and essential feedback.

This year's recommendation emphasizes the need for a system-wide approach, so that actions taken by schools and school boards are well coordinated. It encourages boards and schools to develop and implement plans based on their analyses of assessment data, and anticipates that these plans will be reviewed and updated as specific actions are initiated and completed.

As part of their planning, boards will need to:

- Identify specific teaching and learning practices that lead to improved learning, and include the steps required to promote these practices.
- Outline a program of professional development that will support teachers in acquiring and expanding relevant knowledge and skills.
- Use student achievement results when formulating system-wide and school plans regarding resources, curriculum development and assessment materials for daily classroom assessment.
- Include specific actions that involve educators, parents and the community.

Using Provincial Assessment Results to Support Improvement

SPECIFIC STEPS

For Boards:

1. Review local student achievement results in the context of provincial information.
2. Using questionnaire data and other information about the local community, identify areas of strength and weakness that need to be addressed. Determine how these areas should be addressed within the board's planning priorities.
3. Acknowledge significant efforts that have been made by individual schools to address gaps in student learning, recognizing that each school faces its own set of challenges as it works to improve learning and teaching.
4. Review issues arising from results achieved by students in specific schools or groups of schools and determine what support and resources these students and their teachers require.
5. Encourage every school to develop in-school expertise to provide assistance and support to teachers who have expressed discomfort with teaching and assessing parts of the curriculum, particularly in mathematics.
6. Involve parents, school councils and the community in interpreting and using assessment information.

For Schools:

1. Review results achieved by students in the school in the context of provincial and board information.
2. Using questionnaire data and other information about the school community, identify areas of strength and weakness that need to be addressed.
3. In partnership with the school council, determine key issues to be addressed in the school plan and integrate these priorities within existing curriculum initiatives.
4. Review board planning documents to determine issues that are being addressed across the board and identify specific ways that your school can use these system-wide efforts.
5. Determine resources that are required and identify what support is available from the board and the community.
6. Encourage staff to develop and share their expertise in teaching and assessing specific areas of the curriculum where teachers have identified a need for additional support.

In the spring of 1999, EQAO will survey boards on the actions they have taken in response to assessment information.

Using Provincial Assessment Results to Support Improvement

Implementing the New Curriculum

Recommendations arising from the Grade 3 Assessment: 1997-1998

GENERAL RECOMMENDATION #2

That educators review their language and mathematics programs using provincial, board and school data from the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998 in order to identify and address gaps in the implementation of the new language and mathematics curricula.

The Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998 provided two kinds of data: baseline data on student achievement of the expectations in the new curriculum and contextual data obtained through student, home, teacher and principal questionnaires. The recommendations in this section are rooted in both kinds of data.

Implementing the new *Ontario Curriculum: Grades 1–8* is a priority for teachers. In questionnaires distributed as part of the Grade 3 assessment, 90% of teachers indicated that they place a high priority on implementing the new curriculum. Over 75% reported that they meet at least once a month with other elementary teachers to plan or discuss strategies for implementing the curriculum. Significant percentages of teachers indicated that they are uncomfortable or only somewhat comfortable teaching various aspects of the new curriculum and in assessing student achievement of the curriculum expectations. The general and specific recommendations that follow demonstrate how assessment data can support curriculum implementation and help teachers build expertise in assessing student achievement.

The full implementation of a new curriculum takes place over a period of time, usually three to four years, and proceeds through a number of stages. Initially, educators familiarize themselves with the curriculum content and approach, analyzing the curriculum as a whole and its individual components. Educators then begin to adapt and modify their teaching practices and strategies. Where necessary, they work to expand their own repertoire of knowledge and skills to ensure that they can teach all aspects of the curriculum and assess student achievement effectively.

The final stage of implementation is ongoing. Educators continually refine their programs to improve student achievement. They seek feedback on what teaching approaches most enhance student learning. As they gather and use this feedback, educators build active partnerships between home and school and improve their ability to make decisions that are based on good information and responsive to local needs.

Since the new *Ontario Curriculum* was introduced in the fall of 1997, most elementary principals and teachers are in the early stages of implementing the curriculum. The recommendations that follow were developed with this in mind.

Using Provincial Assessment Results to Support Improvement

Specific Reading Recommendation

That educators have students discuss and apply appropriate strategies in their day-to-day reading to deepen their understanding and improve their response.

Students must understand and apply the wide variety of text formats, language conventions and cueing systems described in the *Ontario Curriculum: Grades 1–8*. The new language curriculum sets out four knowledge and skills categories for reading: reasoning, communication, organization of ideas and application of language conventions.

The latter two categories in particular require knowledge and application of specific reading strategies. For example, students need to be able to identify the organizational patterns and characteristics of different types of reading material, such as stories or poems, and be able to use chapters, tables of contents, glossaries, etc., to aid understanding and find information. They also need to be able to identify phonics, spelling, grammar and punctuation rules, and apply them and other conventions to make sense of their reading. Improvement in the organization of ideas and application of language conventions will support improvement in the other two categories.

SPECIFIC STEPS

Boards and Schools:

1. Review achievement results for students in the board in the context of provincial results.
2. Using questionnaire data, identify areas of strength and weakness that need to be addressed.
3. Review EQAO's scoring scale for reading, paying particular attention to the specific components identified within each category and to how the scale describes achievement across the four levels.
4. Review the EQAO *Educator Handbook: Reporting the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998* and the other materials EQAO has distributed to all schools, including samples of student work at different levels and the scoring scales. Refer to the questions in the *Student Reading Booklet* that deal with the "organization of ideas" and "application of language conventions" and the sample responses.
5. Review the language expectations that are defined in the *Ontario Curriculum* for each grade level and identify the progressive and cumulative nature of the skills in these categories.
6. Review reading programs to determine whether the skills associated with each category are incorporated appropriately in all grades.
7. Work with school councils to encourage students to read for enjoyment and information beyond the school environment.
8. Determine what other resources and in-service support are needed to adapt and modify teaching and learning practices and strategies.

Using Provincial Assessment Results to Support Improvement

In the Classroom:

1. During reading activities in class, ensure that students pay attention to features such as the way ideas are organized in passages and how tables of contents can aid understanding. Have students use the forms and features of writing to improve their understanding of what they read.
2. Use the assessment questions and activities as a guide for developing classroom assessment tools, and use the samples of student work provided by EQAO as a basis for evaluating student achievement throughout the year.
3. Have students interpret EQAO's reading assessment scale in their own words. Encourage them to use it to evaluate their own and other students' reading responses.

Readers will find it useful to review the background information EQAO obtained from students, teachers, principals and parents as part of the Grade 3 assessment. This information is presented on page 38 of this report.

Using Provincial Assessment Results to Support Improvement

Specific Writing Recommendation

That educators review their writing programs to ensure that they are teaching and assessing all components and skills involved in the writing process.

The new writing curriculum uses four categories to describe the knowledge and skills that students are expected to acquire: reasoning, communication, organization of ideas, and application of language conventions. Writing is an integrated activity that combines the knowledge and skills in these four categories. The writer develops and communicates ideas and information for specific purposes and to specific audiences. Effective writing requires the use of an appropriate form, organizational structure, a variety of suitable writing techniques and the correct language conventions. Students need frequent opportunities to write for different purposes and audiences in order to integrate these components and consolidate their skills.

SPECIFIC STEPS

Boards and Schools:

1. Review achievement results for students in the board in the context of the provincial results.
2. Using questionnaire data, identify areas of strength and weakness that need to be addressed.
3. Review EQAO's scoring scale for writing, paying particular attention to the specific components identified within each category and to the descriptions of achievement across the four levels.
4. Review the EQAO *Educator Handbook: Reporting the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998*, samples of student work at different levels, the scoring scales and other materials that EQAO has distributed. Refer to the writing tasks in the samples of student work that demonstrate achievement within the categories at different levels.
5. Review the specific language expectations in the *Ontario Curriculum* across all the grades to identify the progressive and cumulative nature of the skills and determine which writing skills fit into which categories.
6. Review board and school programs to determine the extent to which the skills associated with the categories are incorporated across the grades and in specific programs within the grade.
7. Check the frequency and extent to which the skills are integrated through real writing experiences for different purposes and audiences.
8. Refer to the material in the *Ontario Curriculum* Writing Exemplars Project.
9. Work with school councils to encourage students to write on thoughts, feelings and information beyond the school environment.
10. Determine what other resources and in-service support are needed to adapt and modify teaching and learning practices and strategies.

Using Provincial Assessment Results to Support Improvement

In the Classroom:

1. Ensure that all writing skills are included in the writing program by using the overall and specific language expectations in the *Ontario Curriculum: Grades 1–8,* together with the category descriptions in EQAO's Grade 3 writing assessment scale.
2. Use classroom reading activities as opportunities to model the ways in which published writers organize and develop their ideas and use different organizational patterns and voices to convey information or opinions.
3. Provide frequent opportunities for students to work individually and collaboratively through the various stages of the writing process. Students need to integrate all of the writing components and consolidate their skills. Particular attention to the revision and editing stages is essential.
4. Have students interpret EQAO's writing assessment scale in their own words. Encourage them to use it to evaluate their own and other students' writing.

Readers will find it useful to review the background information EQAO obtained from students, teachers, principals and parents as part of the Grade 3 assessment. This information is presented on page 38 of this report.

Using Provincial Assessment Results to Support Improvement

Specific Mathematics Recommendation

That educators review their programs to ensure that all the expectations in the mathematics curriculum are being addressed and that students have frequent opportunities to explain how they analyze problems, arrive at solutions and check their work.

The new elementary mathematics curriculum focuses on five strands in mathematics: number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability. Within each of these strands, the curriculum defines four categories of mathematical knowledge and skill: problem solving, understanding concepts, applying procedures, and communicating in mathematics. For example, achievement in the category "problem solving" is determined by assessing students' ability to solve problems in each of the five strands.

SPECIFIC STEPS

Boards and Schools:

1. Review student results in the context of provincial results.
2. Using questionnaire data, identify areas of strength and weakness that need to be addressed.
3. Review EQAO's scoring scale for mathematics, paying particular attention to the specific components identified within each category and strand and to how the scale describes achievement across the four levels.
4. Review EQAO's *Educator Handbook: Reporting the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998*, samples of student work, the scoring scales and other materials EQAO has distributed. Refer to the questions in the student mathematics booklet and samples of student work that demonstrate achievement of the categories and strands at different levels.
5. Review the specific mathematics expectations in the *Ontario Curriculum: Grades 1–8* across the grades to determine the progressive and cumulative nature of the skills in the categories.
6. Review school and board programs to identify whether the skills associated with the categories are incorporated in specific programs within the grade and across the grades. Ensure that the skills are integrated through real-life applications of the various mathematics activities within the strands.
7. Work with school councils to encourage students to apply what they know and can do in mathematics beyond the school environment.
8. Determine what resources and in-service support are needed to improve programs.

In the Classroom:

1. Ensure that the mathematics program addresses all strands and components within each category and includes activities that call for higher-order thinking. Refer to the overall and specific mathematics expectations in the *Ontario Curriculum: Grades 1–8* and the category and strand descriptions in EQAO's scoring scales.
2. Ensure that students have frequent opportunities to communicate using everyday and mathematical language, both orally and through journal writing.
3. Use the EQAO assessment materials as one basis for developing activities and questions that address each strand and category.
4. Have students interpret EQAO's mathematics assessment scale in their own words. Encourage them to use it to evaluate their own and other students' work.

Using Provincial Assessment Results to Support Improvement

Strengthening Knowledge and Skills in Mathematics

Recommendation arising from the Grade 9 Assessment: 1997-1998

GENERAL RECOMMENDATION #3

That secondary students have frequent opportunities to strengthen their knowledge and skills in all aspects of the mathematics curriculum by solving problems that have real-life applications.

The Grade 9 Assessment of Mathematics: 1997-1998 provided two kinds of data: achievement data based on the *Common Curriculum: Mathematics Grades 1–9* and contextual data obtained through student, home, teacher and principal questionnaires. The following recommendation is rooted in both kinds of data.

Research strongly indicates that when students are engaged in mathematical problem-solving activities, they gain enhanced understanding of concepts and develop more confident and positive attitudes towards mathematics generally.

Mathematics programs must have students apply problem-solving models so that they can build their knowledge and skills. When faced with a new problem, students need to follow several steps:

- investigate the different aspects of the problem
- search for a model that deals with all the aspects of the problem
- use mathematical methods to manipulate and transform the information in order to develop a clearer picture
- generalize and make inferences about other contexts
- communicate what they have done and what they have learned

By using problem-solving tasks based on real-life situations, teachers help to ensure that students consolidate their knowledge and skills in all strands and components of the mathematics program.

Using Provincial Assessment Results to Support Improvement

SPECIFIC STEPS

Boards and Schools:

1. Review the criteria and descriptors in EQAO's mathematics scoring scale and use this information to inform local assessment practices.
2. Review school and board programs to identify whether concepts, communication and all the steps in the problem-solving process are being taught in addition to the procedures necessary to complete mathematics questions with accuracy.
3. Determine what resources and in-service support are needed to address program weaknesses and improve student achievement.

Readers will find it useful to review the background information EQAO obtained from students, teachers, principals and parents as part of the Grade 9 assessment. This information is presented on page 48 of this report.

In the Classroom:

1. Continue working with students to build their proficiency in using mathematical procedures.
2. Emphasize the problem-solving process, including strategies for setting up solutions, methods for drawing conclusions and making inferences, and techniques for explaining all aspects of a problem or solution.
3. Provide ample time and opportunities for students to communicate their mathematical knowledge and skills, both in writing and in discussions with other students and the teacher.
4. Work together with other teachers to develop scoring scales and techniques for use with students.
5. Use EQAO's sample assessment unit as one model for developing appropriate problem-solving tasks that allow students to demonstrate their skills in all strands and components.

Using Provincial Assessment Results to Support Improvement

EQAO's Responsibilities

EQAO's 1997-1998 *Provincial Report on Achievement* affirmed the Office's commitment to communicate widely about the value of high-quality assessment and to promote the appropriate and effective use of assessment results. The *Provincial Report* set out eight areas of responsibility for EQAO. The following is an update on the progress EQAO has made in each area.

1. **Develop a provincial indicators system to provide a fuller context for reporting student achievement and for assessing quality in the Ontario school system.**

   In 1998, EQAO published a consultation paper on the Education Quality Indicators Program (EQUIP). EQUIP will provide a wide range of information about factors affecting school quality at the provincial, board and school levels. Using feedback obtained from responses to the consultation paper, EQAO will begin piloting aspects of the program in the 1998-1999 school year.

2. **In collaboration with other institutions and organizations, continue to undertake short- and long-term research to identify factors that influence student achievement.**

   In 1998, EQAO received a report from a team of researchers it had commissioned to analyze the TIMSS data. EQAO shared the results of this research at a symposium held in May 1998. On the strength of this research, EQAO developed a series of resource materials to help teachers address areas where students' work demonstrated a lack of knowledge or understanding. These materials included four booklets on mathematics and science instruction for Grade 4, Grade 8 and secondary school teachers. EQAO also commissioned research monographs in a range of subject areas relating to EQAO's province-wide assessments. In 1998-1999, EQAO will work with the Ontario Institute for Studies in Education to carry out further research on assessment and student achievement.

3. **Continue to share knowledge and information about good assessment practices.**

   This fall, EQAO sent schools and boards copies of an *Educator Handbook: Reporting the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998* designed to help teachers and principals interpret, communicate and use assessment results. EQAO also distributed samples of student work which educators can use in discussions about achievement with students and parents. EQAO trained teachers, principals and board contacts to administer the assessments and communicate student results. On an ongoing basis, EQAO staff meet with and make presentations to educators, parents and others with an interest in education.

4. **Continue to conduct high-quality province-wide assessments that provide useful models for teachers.**

   The tasks and activities in EQAO's province-wide tests give teachers a range of models, methods and resources they can use to gather and communicate feedback about how well students are achieving the expectations in the provincial curriculum. EQAO uses a variety of quality control measures to ensure that its assessments yield valid and reliable data.

Using Provincial Assessment Results to Support Improvement

5. **Continue to seek input from educators and parents about EQAO assessment processes to assist in planning future assessments.**

   Educators from across Ontario are involved in all of EQAO's assessment activities. Their extensive involvement gives them opportunities to expand and share their assessment expertise and strategies and at the same time helps EQAO create effective assessments. EQAO surveys teachers, parents and board contacts to obtain feedback about provincial assessment processes. The Office also receives many letters and calls from educators, parents, students and members of the public. EQAO uses this feedback to improve the design and delivery of its province-wide assessments.

6. **Continue to involve as many teachers as possible in province-wide assessment processes.**

   Educators are extensively involved in developing, validating, administering and marking EQAO's assessments. By participating in the field-test processes, educators provide critical feedback which EQAO uses to refine the assessments. Over 11,000 teachers and principals were trained to administer the 1998 Grade 3 and Grade 9 assessments. Approximately 1,500 teachers and principals were trained to mark these assessments.

7. **Provide a wide range of data on factors that affect student achievement, including information on socioeconomic and regional variables.**

   EQAO provides schools with a template they can use to report assessment results to parents and the community together with other important information about the school population and programs. EQUIP will yield additional data about school environments and other factors that affect education quality and student achievement. EQAO is currently considering partnerships with other provincial and national organizations that could assist in making such information available.

8. **Continue to supply parents with detailed information about student achievement.**

   Prior to the assessment period last spring, EQAO published a *Parent Handbook* to inform parents about province-wide testing and to explain how test results can be used to improve learning and teaching. This fall, approximately 135,000 individual student reports were issued to parents and teachers of students who participated in the Grade 3 Assessment of Reading, Writing and Mathematics: 1997-1998. The individual student report provides detailed descriptions of each child's achievement measured against 17 subject categories and mathematics strands. In addition, teachers have received samples of student work at each level in all three subject areas which they can use in their discussions with parents.

EQUIP Summary

The Education Quality and Accountability Office (EQAO) is responsible for reporting and making recommendations to the public and the Minister of Education and Training on the quality and effectiveness of elementary and secondary education in Ontario and the public accountability of Ontario's school boards.

Assessment results are one piece of information about a school. Other types of information will enrich EQAO's ability to report to the public on factors affecting school quality and effectiveness. As in other jurisdictions, Ontario is developing a comprehensive indicators program. The Education Quality Indicators Program (EQUIP) will produce profiles of schools, boards and the province, and will include information that will complement and support the interpretation of assessment data.

When fully implemented, EQUIP will provide a comprehensive and readily understood picture of education in Ontario, ensure that student achievement is reported in the proper context and establish a sound basis for program improvement efforts.

In order to understand which indicators are most useful to Ontarians, EQAO developed two documents. The first was a consultation paper and questionnaire, the second was a background paper on education indicators. Between February 15, 1998, and May 15, 1998, EQAO conducted a public consultation asking people to rate the usefulness of a number of proposed indicators described in the consultation paper and questionnaire. Questionnaires were sent to education stakeholders, schools, school boards and community groups. The questionnaire was posted on the EQAO Web site, and EQAO accepted responses via the Internet.

EQAO received 600 responses to the questionnaire and is in the process of analyzing them. Based on the analysis, a pilot study will be developed with selected indicators.

Appendices

Percentages for achievement data may not always sum to 100 due to rounding.

Board name: Algoma DSB

39 Schools with Grade 3 students

59 Classes with Grade 3 students

935 Grade 3 students

0% In English as a Second Language Program

4% Exempted in all three subjects

51% Boys 49% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	1	2	9	44	35	3
			2	10	47	38	3
Communication	6	1	6	9	41	34	3
			6	10	44	37	3
Organization of Ideas	6	1	4	13	38	34	4
			5	14	41	36	4
Application of Language Conventions	6	1	4	17	33	34	5
			4	18	35	37	6
Overall Level of Achievement in Reading	6	1	9	5	35	40	4
			10	6	38	43	4
Writing							
Reasoning	5	1	1	6	45	37	5
			1	7	48	39	5
Communication	5	1	1	8	45	36	4
			1	8	48	38	5
Organization of Ideas	5	1	1	7	49	33	4
			1	8	52	35	5
Application of Language Conventions	5	1	1	10	44	34	5
			1	11	47	36	5
Overall Level of Achievement in Writing	5	1	1	5	43	40	5
			1	6	46	42	5
Mathematics							
Problem Solving	5	1	1	18	41	32	2
			1	19	43	34	2
Understanding of Concepts	5	1	2	8	39	42	3
			2	9	41	44	4
Application of Mathematical Procedures	5	1	1	10	37	42	5
			1	10	39	44	5
Communication of Required Knowledge	5	1	3	20	43	26	3
			3	21	46	27	3
Overall Level of Achievement in Mathematics	5	1	4	8	38	41	3
			4	9	41	43	4
Mathematics Strands							
Number Sense and Numeration	5	1	1	15	38	35	4
			2	16	40	37	5
Measurement	5	1	1	13	40	36	3
			1	14	42	39	3
Geometry and Spatial Sense	5	1	5	9	39	38	3
			5	9	42	41	3
Patterning and Algebra	5	1	1	15	39	35	4
			1	16	41	37	4
Data Management and Probability	5	1	2	11	32	45	4
			2	12	34	48	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Algonquin and Lakeshore Catholic DSB

33 Schools with Grade 3 students

59 Classes with Grade 3 students

951 Grade 3 students

0% In English as a Second Language Program

5% Exempted in all three subjects

51% Boys 47% Girls 2% Gender not specified

4% Of the students said they speak only or mostly in another language at home

9% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	0	1	6	46	36	2
			2	7	50	39	2
Communication	7	0	5	9	41	36	2
			5	10	45	39	2
Organization of Ideas	7	0	5	14	39	32	3
			5	15	42	34	3
Application of Language Conventions	7	0	4	17	33	36	2
			5	18	36	39	3
Overall Level of Achievement in Reading	7	0	8	6	35	41	2
			8	6	38	45	2
Writing							
Reasoning	5	0	4	5	45	36	5
			4	5	48	39	5
Communication	5	0	4	6	45	35	5
			4	6	47	37	5
Organization of Ideas	5	0	4	6	47	34	4
			4	7	50	35	4
Application of Language Conventions	5	0	4	6	42	38	5
			4	6	45	40	5
Overall Level of Achievement in Writing	5	0	4	4	42	40	5
			4	5	44	42	5
Mathematics							
Problem Solving	5	1	2	17	46	28	1
			2	18	49	30	1
Understanding of Concepts	5	1	2	10	41	40	2
			2	11	44	42	2
Application of Mathematical Procedures	5	1	1	11	40	41	2
			1	11	43	44	2
Communication of Required Knowledge	5	1	4	21	47	23	1
			4	22	49	24	1
Overall Level of Achievement in Mathematics	5	1	5	9	41	38	1
			5	9	44	40	1
Mathematics Strands							
Number Sense and Numeration	5	1	2	16	38	36	2
			2	17	40	38	3
Measurement	5	1	1	12	45	35	1
			1	13	48	37	1
Geometry and Spatial Sense	5	1	5	11	42	36	1
			5	11	44	38	1
Patterning and Algebra	5	1	1	16	42	35	1
			2	16	44	37	1
Data Management and Probability	5	1	1	11	40	40	3
			1	11	42	43	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Avon Maitland DSB

44	Schools with Grade 3 students	0%	In English as a Second Language Program
77	Classes with Grade 3 students	1%	Exempted in all three subjects
1364	Grade 3 students	51%	Boys 47% Girls 1% Gender not specified
		1%	Of the students said they speak only or mostly in another language at home
		3%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	4	0	2	7	47	36	3
			2	8	49	38	3
Communication	4	0	6	10	42	35	3
			6	10	44	36	3
Organization of Ideas	4	0	7	17	37	31	4
			7	18	39	32	4
Application of Language Conventions	4	0	5	21	34	32	3
			5	22	36	33	4
Overall Level of Achievement in Reading	4	0	10	6	39	37	3
			11	7	41	38	4
Writing							
Reasoning	2	0	2	5	50	36	5
			2	6	51	37	5
Communication	2	0	2	7	49	33	7
			2	7	50	34	7
Organization of Ideas	2	0	2	7	50	34	5
			2	7	51	35	5
Application of Language Conventions	2	0	2	9	48	34	6
			2	9	49	35	6
Overall Level of Achievement in Writing	2	0	2	5	47	37	6
			2	5	48	38	6
Mathematics							
Problem Solving	2	1	2	23	45	26	1
			2	24	46	27	1
Understanding of Concepts	2	1	2	12	44	37	2
			2	13	45	38	2
Application of Mathematical Procedures	2	1	1	13	44	37	2
			1	14	46	38	2
Communication of Required Knowledge	2	1	4	25	46	20	1
			4	26	48	21	1
Overall Level of Achievement in Mathematics	2	1	5	12	45	34	1
			5	12	46	35	2
Mathematics Strands							
Number Sense and Numeration	2	1	2	19	41	32	3
			2	20	42	33	3
Measurement	2	1	1	15	46	33	2
			1	16	47	34	2
Geometry and Spatial Sense	2	1	5	14	46	31	1
			5	15	48	32	1
Patterning and Algebra	2	1	1	19	45	29	2
			1	20	47	30	2
Data Management and Probability	2	1	1	15	42	36	3
			1	15	44	37	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Bluewater DSB

44 Schools with Grade 3 students

82 Classes with Grade 3 students

1554 Grade 3 students

0% In English as a Second Language Program

2% Exempted in all three subjects

52% Boys 47% Girls 0% Gender not specified

1% Of the students said they speak only or mostly in another language at home

2% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	1	4	8	43	37	3
			4	8	46	39	3
Communication	5	1	8	9	41	32	3
			9	10	43	34	4
Organization of Ideas	5	1	8	16	35	32	3
			8	17	38	34	3
Application of Language Conventions	5	1	7	17	32	34	4
			7	19	34	36	4
Overall Level of Achievement in Reading	5	1	13	6	35	38	3
			14	6	37	40	4
Writing							
Reasoning	3	1	3	7	44	37	5
			3	7	46	39	5
Communication	3	1	3	8	45	34	7
			3	8	46	36	7
Organization of Ideas	3	1	3	8	46	35	5
			3	9	47	36	5
Application of Language Conventions	3	1	3	9	42	36	7
			3	10	44	37	7
Overall Level of Achievement in Writing	3	1	3	7	42	39	6
			3	7	43	41	6
Mathematics							
Problem Solving	2	1	3	19	44	29	2
			3	20	46	30	3
Understanding of Concepts	2	1	3	10	40	40	4
			3	10	41	42	4
Application of Mathematical Procedures	2	1	1	11	42	40	4
			1	11	43	41	4
Communication of Required Knowledge	2	1	5	23	43	23	3
			6	24	45	24	3
Overall Level of Achievement in Mathematics	2	1	6	9	41	38	3
			7	9	42	39	4
Mathematics Strands							
Number Sense and Numeration	2	1	3	17	38	36	4
			3	18	39	37	4
Measurement	2	1	3	13	42	36	4
			3	14	43	37	4
Geometry and Spatial Sense	2	1	6	12	41	36	2
			6	12	43	37	3
Patterning and Algebra	2	1	2	14	46	32	3
			2	14	47	33	3
Data Management and Probability	2	1	3	12	39	40	4
			3	12	40	41	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Brant Haldimand Norfolk Catholic DSB

28	Schools with Grade 3 students	0%	In English as a Second Language Program
40	Classes with Grade 3 students	1%	Exempted in all three subjects
768	Grade 3 students	51%	Boys 49% Girls 1% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home
		8%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	3	1	2	7	49	36	2
			2	7	51	37	2
Communication	3	1	4	9	43	36	3
			5	10	45	37	3
Organization of Ideas	3	1	4	15	39	35	3
			4	16	41	37	3
Application of Language Conventions	3	1	3	18	36	36	3
			3	18	37	38	3
Overall Level of Achievement in Reading	3	1	7	6	39	40	3
			8	7	41	42	3
Writing							
Reasoning	2	1	2	4	46	40	5
			3	4	47	41	5
Communication	2	1	2	4	48	37	6
			3	4	49	38	6
Organization of Ideas	2	1	2	5	49	38	4
			3	5	50	39	4
Application of Language Conventions	2	1	2	5	44	41	6
			3	5	45	42	6
Overall Level of Achievement in Writing	2	1	2	3	43	44	5
			3	3	44	45	5
Mathematics							
Problem Solving	1	1	2	21	51	23	1
			2	22	52	23	1
Understanding of Concepts	1	1	2	12	46	35	2
			3	13	47	36	2
Application of Mathematical Procedures	1	1	1	12	46	36	3
			1	12	47	36	3
Communication of Required Knowledge	1	1	2	25	49	20	1
			3	26	50	20	1
Overall Level of Achievement in Mathematics	1	1	4	12	47	33	2
			4	12	48	34	2
Mathematics Strands							
Number Sense and Numeration	1	1	2	20	44	29	2
			2	21	45	30	2
Measurement	1	1	2	17	47	30	2
			2	17	48	31	2
Geometry and Spatial Sense	1	1	4	14	48	31	1
			4	15	49	31	1
Patterning and Algebra	1	1	2	16	50	27	2
			3	16	51	28	2
Data Management and Probability	1	1	2	12	43	38	3
			2	12	44	39	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Bruce-Grey Catholic DSB

10 Schools with Grade 3 students

18 Classes with Grade 3 students

294 Grade 3 students

0% In English as a Second Language Program

3% Exempted in all three subjects

49% Boys 51% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

2% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	8	0	3	10	41	35	2
			3	11	45	38	3
Communication	8	0	10	10	35	35	1
			11	11	38	39	1
Organization of Ideas	8	0	7	15	34	32	3
			8	17	37	35	3
Application of Language Conventions	8	0	6	19	32	31	3
			7	20	35	34	4
Overall Level of Achievement in Reading	8	0	14	6	34	35	2
			15	7	37	38	3
Writing							
Reasoning	4	0	2	4	46	39	4
			2	4	48	41	5
Communication	4	0	2	7	43	38	5
			2	8	45	40	6
Organization of Ideas	4	0	2	6	46	37	3
			2	6	49	39	4
Application of Language Conventions	4	0	2	8	41	37	7
			2	9	43	39	8
Overall Level of Achievement in Writing	4	0	2	4	43	40	6
			2	4	45	42	6
Mathematics							
Problem Solving	3	0	3	19	48	24	2
			3	20	50	25	2
Understanding of Concepts	3	0	4	10	44	36	2
			4	11	45	37	2
Application of Mathematical Procedures	3	0	0	12	46	34	4
			0	12	48	36	5
Communication of Required Knowledge	3	0	6	26	41	21	2
			7	27	43	21	2
Overall Level of Achievement in Mathematics	3	0	9	8	44	33	3
			9	8	45	35	3
Mathematics Strands							
Number Sense and Numeration	3	0	1	18	40	33	4
			1	19	41	35	5
Measurement	3	0	1	14	47	33	2
			1	15	48	34	2
Geometry and Spatial Sense	3	0	11	15	40	30	1
			12	15	42	31	1
Patterning and Algebra	3	0	2	18	45	31	1
			2	19	46	32	1
Data Management and Probability	3	0	3	10	43	38	3
			3	10	44	39	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Catholic DSB of Eastern Ontario

33	Schools with Grade 3 students	0%	In English as a Second Language Program
59	Classes with Grade 3 students	3%	Exempted in all three subjects
1039	Grade 3 students	51% Boys	49% Girls 0% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home
		11%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	1	3	11	44	33	2
			3	12	47	35	2
Communication	6	1	9	13	40	29	3
			9	14	43	31	3
Organization of Ideas	6	1	8	21	38	25	2
			8	23	40	27	2
Application of Language Conventions	6	1	7	24	31	27	4
			8	26	33	29	5
Overall Level of Achievement in Reading	6	1	14	9	36	32	2
			15	10	38	34	3
Writing							
Reasoning	4	0	3	7	47	34	4
			3	7	50	35	5
Communication	4	0	3	9	45	34	5
			3	9	47	35	6
Organization of Ideas	4	0	3	9	47	32	4
			3	10	49	34	4
Application of Language Conventions	4	0	3	10	43	34	6
			3	10	45	35	7
Overall Level of Achievement in Writing	4	0	3	7	44	36	6
			3	7	46	38	6
Mathematics							
Problem Solving	3	0	3	29	43	20	2
			3	30	45	20	2
Understanding of Concepts	3	0	4	19	41	31	2
			4	19	43	32	2
Application of Mathematical Procedures	3	0	2	17	45	29	3
			2	18	47	30	3
Communication of Required Knowledge	3	0	7	31	41	15	2
			7	32	43	16	2
Overall Level of Achievement in Mathematics	3	0	8	16	43	27	3
			8	16	45	28	3
Mathematics Strands							
Number Sense and Numeration	3	0	3	25	40	25	3
			3	26	41	26	4
Measurement	3	0	2	21	44	27	2
			3	22	45	28	2
Geometry and Spatial Sense	3	0	7	21	42	25	2
			7	21	43	26	2
Patterning and Algebra	3	0	2	23	47	22	2
			2	24	49	23	2
Data Management and Probability	3	0	3	19	39	33	2
			3	20	40	35	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: DSB of Niagara

98 Schools with Grade 3 students

175 Classes with Grade 3 students

3249 Grade 3 students

1% In English as a Second Language Program

3% Exempted in all three subjects

52% Boys 48% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	4	1	2	6	44	40	3
			2	7	47	42	3
Communication	4	1	4	9	43	37	3
			4	9	45	39	3
Organization of Ideas	4	1	3	14	38	36	4
			4	15	40	38	4
Application of Language Conventions	4	1	3	16	32	40	4
			4	16	34	42	4
Overall Level of Achievement in Reading	4	1	7	6	36	43	3
			7	6	38	45	4
Writing							
Reasoning	3	1	1	5	42	42	5
			1	5	44	44	6
Communication	3	1	1	5	41	41	6
			1	6	43	43	7
Organization of Ideas	3	1	1	6	44	40	5
			1	6	45	42	5
Application of Language Conventions	3	1	1	6	39	43	7
			1	6	41	44	7
Overall Level of Achievement in Writing	3	1	1	4	39	45	6
			1	4	40	47	7
Mathematics							
Problem Solving	3	1	2	18	43	31	2
			2	18	44	32	2
Understanding of Concepts	3	1	2	9	38	44	3
			2	9	40	46	3
Application of Mathematical Procedures	3	1	1	9	40	43	4
			1	10	41	44	4
Communication of Required Knowledge	3	1	3	20	45	26	2
			3	21	47	27	2
Overall Level of Achievement in Mathematics	3	1	4	9	39	41	3
			4	9	41	43	3
Mathematics Strands							
Number Sense and Numeration	3	1	2	16	37	37	4
			2	16	39	38	4
Measurement	3	1	1	12	42	39	3
			1	12	43	40	3
Geometry and Spatial Sense	3	1	4	11	41	39	2
			4	11	42	40	2
Patterning and Algebra	3	1	2	13	42	36	3
			2	14	44	37	3
Data Management and Probability	3	1	1	10	37	43	4
			2	10	39	45	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: DSB Ontario North East

27 Schools with Grade 3 students

45 Classes with Grade 3 students

702 Grade 3 students

1% In English as a Second Language Program

3% Exempted in all three subjects

52% Boys 47% Girls 0% Gender not specified

5% Of the students said they speak only or mostly in another language at home

9% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	1	4	13	46	30	2
			4	14	49	32	2
Communication	4	1	8	17	41	28	2
			8	18	43	30	2
Organization of Ideas	4	1	6	23	34	29	2
			7	24	36	30	2
Application of Language Conventions	4	1	8	23	33	29	3
			8	24	35	30	3
Overall Level of Achievement in Reading	4	1	12	12	36	33	2
			13	12	38	35	2
Writing							
Reasoning	3	1	6	8	49	29	4
			7	8	51	30	4
Communication	3	1	6	8	49	28	5
			7	8	51	29	5
Organization of Ideas	3	1	6	8	49	29	3
			7	9	51	30	3
Application of Language Conventions	3	1	6	10	45	30	5
			7	10	47	31	5
Overall Level of Achievement in Writing	3	1	6	7	46	32	4
			7	7	48	34	4
Mathematics							
Problem Solving	3	2	3	28	42	21	1
			3	30	44	22	1
Understanding of Concepts	3	2	3	19	40	31	1
			3	20	42	33	1
Application of Mathematical Procedures	3	2	1	20	41	31	2
			2	21	43	33	2
Communication of Required Knowledge	3	2	4	34	41	15	1
			5	36	43	16	1
Overall Level of Achievement in Mathematics	3	2	6	19	40	28	2
			6	20	43	30	2
Mathematics Strands							
Number Sense and Numeration	3	2	2	26	38	27	1
			2	28	40	28	2
Measurement	3	2	1	22	44	26	1
			1	23	47	27	2
Geometry and Spatial Sense	3	2	7	22	41	24	1
			8	23	44	25	1
Patterning and Algebra	3	2	3	23	42	26	1
			3	24	44	27	2
Data Management and Probability	3	2	2	21	37	33	2
			2	22	39	35	2

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Dufferin Peel Catholic DSB

92 Schools with Grade 3 students

228 Classes with Grade 3 students

5389 Grade 3 students

5% In English as a Second Language Program

2% Exempted in all three subjects

51% Boys 49% Girls 0% Gender not specified

11% Of the students said they speak only or mostly in another language at home

19% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	1	1	8	46	38	2
			1	9	48	40	2
Communication	4	1	4	10	41	37	3
			4	11	43	39	3
Organization of Ideas	4	1	3	16	39	33	3
			3	17	41	35	4
Application of Language Conventions	4	1	4	18	34	35	3
			4	19	36	37	4
Overall Level of Achievement in Reading	4	1	7	7	38	40	3
			8	8	40	42	3
Writing							
Reasoning	3	1	3	5	43	40	5
			3	5	45	42	5
Communication	3	1	3	6	42	38	6
			3	6	44	40	6
Organization of Ideas	3	1	3	6	44	38	5
			3	6	46	40	5
Application of Language Conventions	3	1	3	7	40	40	6
			3	7	42	41	6
Overall Level of Achievement in Writing	3	1	3	4	40	43	6
			3	4	41	45	6
Mathematics							
Problem Solving	3	1	2	21	45	27	2
			2	22	46	28	2
Understanding of Concepts	3	1	2	12	42	38	2
			3	13	44	39	2
Application of Mathematical Procedures	3	1	1	12	43	38	3
			1	12	45	39	3
Communication of Required Knowledge	3	1	3	23	47	22	2
			3	24	48	23	2
Overall Level of Achievement in Mathematics	3	1	4	11	44	36	2
			4	11	45	37	2
Mathematics Strands							
Number Sense and Numeration	3	1	2	17	40	34	3
			2	18	41	36	4
Measurement	3	1	2	16	46	31	2
			2	17	47	32	2
Geometry and Spatial Sense	3	1	4	14	45	32	2
			4	14	47	33	2
Patterning and Algebra	3	1	2	16	45	32	2
			2	16	47	33	2
Data Management and Probability	3	1	2	11	38	41	4
			2	12	40	42	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Durham Catholic DSB

37	Schools with Grade 3 students	3%	In English as a Second Language Program
86	Classes with Grade 3 students	3%	Exempted in all three subjects
1953	Grade 3 students	50% Boys	49% Girls 0% Gender not specified
		4%	Of the students said they speak only or mostly in another language at home
		11%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	5	1	2	6	44	40	3
			2	6	46	42	3
Communication	5	1	4	8	40	39	4
			4	8	42	41	4
Organization of Ideas	5	1	4	14	36	37	4
			4	15	38	39	4
Application of Language Conventions	5	1	4	17	32	37	5
			4	18	33	39	5
Overall Level of Achievement in Reading	5	1	7	5	36	43	4
			7	6	38	45	4
Writing							
Reasoning	4	1	3	5	41	42	5
			3	5	44	44	5
Communication	4	1	3	6	40	40	6
			3	6	42	42	7
Organization of Ideas	4	1	3	5	42	40	5
			3	6	44	42	5
Application of Language Conventions	4	1	3	6	40	39	7
			3	6	43	41	7
Overall Level of Achievement in Writing	4	1	3	4	38	44	6
			3	4	40	47	6
Mathematics							
Problem Solving	4	1	1	19	44	30	2
			1	19	46	31	2
Understanding of Concepts	4	1	1	9	42	41	2
			1	9	44	43	3
Application of Mathematical Procedures	4	1	0	10	40	43	3
			0	10	42	45	3
Communication of Required Knowledge	4	1	2	21	45	25	2
			3	22	47	26	2
Overall Level of Achievement in Mathematics	4	1	3	9	41	40	2
			3	9	43	42	3
Mathematics Strands							
Number Sense and Numeration	4	1	1	15	39	36	5
			1	15	41	38	5
Measurement	4	1	1	14	43	35	3
			1	14	45	37	3
Geometry and Spatial Sense	4	1	3	12	43	36	2
			3	13	45	38	2
Patterning and Algebra	4	1	2	14	45	32	3
			2	15	47	34	3
Data Management and Probability	4	1	1	10	37	44	4
			1	11	39	46	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Durham DSB

89 Schools with Grade 3 students

249 Classes with Grade 3 students

4246 Grade 3 students

1% In English as a Second Language Program

2% Exempted in all three subjects

51% Boys 48% Girls 1% Gender not specified

2% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	1	2	6	44	39	3
			2	7	47	41	3
Communication	5	1	5	8	41	37	3
			5	8	44	40	3
Organization of Ideas	5	1	4	14	37	36	3
			4	15	39	38	4
Application of Language Conventions	5	1	3	17	33	37	4
			4	18	35	39	5
Overall Level of Achievement in Reading	5	1	8	5	36	42	3
			8	6	39	44	3
Writing							
Reasoning	3	1	3	5	43	39	5
			4	5	45	41	6
Communication	3	1	3	6	43	37	6
			4	6	45	39	6
Organization of Ideas	3	1	3	6	44	37	5
			4	7	46	39	5
Application of Language Conventions	3	1	3	7	40	39	6
			4	7	41	41	6
Overall Level of Achievement in Writing	3	1	3	5	39	42	6
			4	5	41	44	6
Mathematics							
Problem Solving	3	1	2	19	43	30	2
			2	20	45	31	2
Understanding of Concepts	3	1	3	10	40	40	3
			3	10	41	42	3
Application of Mathematical Procedures	3	1	1	11	40	41	3
			1	11	42	43	3
Communication of Required Knowledge	3	1	4	22	44	24	3
			4	23	46	25	3
Overall Level of Achievement in Mathematics	3	1	5	9	40	38	3
			5	9	42	40	3
Mathematics Strands							
Number Sense and Numeration	3	1	2	16	38	34	5
			3	17	40	36	5
Measurement	3	1	2	13	42	36	3
			2	14	44	37	3
Geometry and Spatial Sense	3	1	5	11	42	34	3
			5	12	44	36	3
Patterning and Algebra	3	1	3	13	44	33	3
			3	14	46	34	3
Data Management and Probability	3	1	2	12	37	41	5
			2	12	38	43	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Grand Erie DSB

69 Schools with Grade 3 students

135 Classes with Grade 3 students

2269 Grade 3 students

1% In English as a Second Language Program

2% Exempted in all three subjects

50% Boys 49% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	2	3	9	47	33	2
			3	10	50	35	2
Communication	5	2	7	12	42	30	2
			7	13	45	33	3
Organization of Ideas	5	2	6	18	37	29	2
			6	20	40	31	3
Application of Language Conventions	5	2	6	21	33	30	3
			7	22	36	32	3
Overall Level of Achievement in Reading	5	2	11	8	38	34	2
			11	9	41	37	3
Writing							
Reasoning	2	1	2	7	47	37	4
			3	7	48	38	4
Communication	2	1	2	10	45	35	5
			3	10	46	36	6
Organization of Ideas	2	1	2	9	47	34	4
			3	10	49	35	4
Application of Language Conventions	2	1	2	11	45	34	5
			3	12	46	35	5
Overall Level of Achievement in Writing	2	1	2	7	43	39	5
			3	7	45	40	5
Mathematics							
Problem Solving	2	1	2	23	44	25	2
			2	24	46	26	2
Understanding of Concepts	2	1	3	14	42	35	2
			3	14	44	36	3
Application of Mathematical Procedures	2	1	1	14	44	35	3
			1	14	46	36	3
Communication of Required Knowledge	2	1	4	28	43	20	2
			5	29	44	20	2
Overall Level of Achievement in Mathematics	2	1	6	12	44	32	3
			6	13	45	33	3
Mathematics Strands							
Number Sense and Numeration	2	1	2	20	39	33	4
			2	21	40	34	4
Measurement	2	1	2	18	43	31	3
			2	19	44	32	3
Geometry and Spatial Sense	2	1	6	17	42	30	2
			6	17	44	32	2
Patterning and Algebra	2	1	2	18	45	28	2
			2	19	47	29	2
Data Management and Probability	2	1	2	17	41	33	4
			2	17	42	34	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Greater Essex County DSB

55	Schools with Grade 3 students	1%	In English as a Second Language Program
104	Classes with Grade 3 students	4%	Exempted in all three subjects
2340	Grade 3 students	53%	Boys 47% Girls 1% Gender not specified
		7%	Of the students said they speak only or mostly in another language at home
		10%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	2	4	10	45	32	2
			4	11	49	34	2
Communication	6	2	10	11	37	32	3
			10	12	40	35	3
Organization of Ideas	6	2	6	17	36	31	2
			7	18	39	34	3
Application of Language Conventions	6	2	7	19	32	32	3
			8	20	35	34	3
Overall Level of Achievement in Reading	6	2	13	7	34	36	2
			14	8	37	39	3
Writing							
Reasoning	5	2	3	5	47	34	4
			3	6	50	36	4
Communication	5	2	3	6	46	32	5
			3	7	50	35	6
Organization of Ideas	5	2	3	7	48	32	4
			3	7	51	34	4
Application of Language Conventions	5	2	3	9	42	34	5
			3	9	45	37	5
Overall Level of Achievement in Writing	5	2	3	5	44	37	5
			3	5	47	39	5
Mathematics							
Problem Solving	5	1	3	25	41	22	2
			3	27	44	24	2
Understanding of Concepts	5	1	5	13	40	33	2
			5	14	43	36	2
Application of Mathematical Procedures	5	1	1	15	41	33	3
			1	16	44	36	3
Communication of Required Knowledge	5	1	5	27	41	19	2
			5	29	43	20	2
Overall Level of Achievement in Mathematics	5	1	7	13	40	31	2
			7	14	43	33	2
Mathematics Strands							
Number Sense and Numeration	5	1	2	20	35	32	4
			3	22	38	34	4
Measurement	5	1	3	18	40	31	2
			3	19	42	33	2
Geometry and Spatial Sense	5	1	7	17	42	26	2
			7	18	45	28	2
Patterning and Algebra	5	1	3	19	43	27	2
			3	21	46	29	2
Data Management and Probability	5	1	3	15	40	33	3
			3	16	43	36	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Halton DSB

60 Schools with Grade 3 students

167 Classes with Grade 3 students

3051 Grade 3 students

3% In English as a Second Language Program

3% Exempted in all three subjects

50% Boys 48% Girls 1% Gender not specified

3% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	1	1	4	37	47	4
			1	4	39	51	5
Communication	6	1	3	5	32	48	5
			3	6	35	51	6
Organization of Ideas	6	1	2	9	32	44	6
			2	10	35	47	6
Application of Language Conventions	6	1	2	11	29	45	6
			2	12	31	48	7
Overall Level of Achievement in Reading	6	1	5	3	29	51	6
			5	4	31	54	6
Writing							
Reasoning	3	1	2	3	37	45	9
			2	3	39	47	9
Communication	3	1	2	4	37	43	10
			2	4	39	45	11
Organization of Ideas	3	1	2	5	40	42	8
			2	5	41	44	8
Application of Language Conventions	3	1	2	5	37	43	9
			2	5	39	44	10
Overall Level of Achievement in Writing	3	1	2	3	34	48	10
			2	3	35	50	10
Mathematics							
Problem Solving	3	1	1	11	42	38	4
			1	12	44	39	4
Understanding of Concepts	3	1	1	5	35	50	5
			1	5	37	52	5
Application of Mathematical Procedures	3	1	0	5	36	48	6
			0	6	38	50	6
Communication of Required Knowledge	3	1	2	14	43	33	4
			2	14	45	34	4
Overall Level of Achievement in Mathematics	3	1	3	4	36	48	5
			3	5	37	50	6
Mathematics Strands							
Number Sense and Numeration	3	1	1	8	34	45	7
			1	9	36	47	7
Measurement	3	1	1	8	38	45	5
			1	8	39	46	5
Geometry and Spatial Sense	3	1	3	7	40	42	4
			3	7	41	44	4
Patterning and Algebra	3	1	1	9	41	41	4
			1	9	42	43	4
Data Management and Probability	3	1	1	7	33	49	7
			1	7	34	51	7

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Halton Catholic DSB

29 Schools with Grade 3 students

69 Classes with Grade 3 students

1686 Grade 3 students

3% In English as a Second Language Program

3% Exempted in all three subjects

49% Boys 50% Girls 0% Gender not specified

5% Of the students said they speak only or mostly in another language at home

9% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	2	1	4	40	44	4
			1	5	43	47	4
Communication	4	2	3	6	37	43	5
			3	6	40	46	5
Organization of Ideas	4	2	3	11	36	39	5
			3	12	38	41	6
Application of Language Conventions	4	2	2	12	30	44	5
			2	13	32	47	5
Overall Level of Achievement in Reading	4	2	5	4	32	48	5
			5	4	34	51	5
Writing							
Reasoning	4	1	1	3	36	49	7
			1	3	37	51	7
Communication	4	1	1	3	36	47	9
			1	3	37	49	9
Organization of Ideas	4	1	1	4	38	47	7
			1	4	39	49	7
Application of Language Conventions	4	1	1	5	37	44	9
			1	5	38	46	9
Overall Level of Achievement in Writing	4	1	1	2	32	51	9
			1	3	34	54	9
Mathematics							
Problem Solving	3	3	1	15	43	31	3
			1	16	46	33	3
Understanding of Concepts	3	3	1	7	40	42	4
			1	8	42	45	4
Application of Mathematical Procedures	3	3	1	7	40	42	5
			1	8	42	45	5
Communication of Required Knowledge	3	3	2	18	44	26	4
			2	19	47	28	4
Overall Level of Achievement in Mathematics	3	3	2	7	40	40	4
			3	8	42	43	4
Mathematics Strands							
Number Sense and Numeration	3	3	1	13	38	36	6
			1	14	41	39	6
Measurement	3	3	1	12	43	35	3
			1	13	46	37	3
Geometry and Spatial Sense	3	3	2	10	43	37	3
			2	11	46	39	3
Patterning and Algebra	3	3	1	11	43	36	3
			1	12	45	39	3
Data Management and Probability	3	3	0	8	34	46	6
			0	8	37	49	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Hamilton-Wentworth DSB

95 Schools with Grade 3 students

218 Classes with Grade 3 students

4174 Grade 3 students

7% In English as a Second Language Program

4% Exempted in all three subjects

51% Boys 48% Girls 1% Gender not specified

6% Of the students said they speak only or mostly in another language at home

8% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	2	7	42	39	3
			2	7	46	42	3
Communication	7	1	5	9	38	37	4
			5	10	41	40	4
Organization of Ideas	7	1	4	13	34	38	4
			4	14	37	40	4
Application of Language Conventions	7	1	4	16	30	38	5
			4	17	32	41	5
Overall Level of Achievement in Reading	7	1	8	5	33	42	4
			9	6	36	45	4
Writing							
Reasoning	5	1	3	4	42	39	5
			3	5	45	42	6
Communication	5	1	3	5	41	38	6
			3	6	44	40	7
Organization of Ideas	5	1	3	6	43	37	5
			3	6	46	40	5
Application of Language Conventions	5	1	3	5	40	39	6
			3	6	42	42	7
Overall Level of Achievement in Writing	5	1	3	4	39	42	6
			3	4	42	45	6
Mathematics							
Problem Solving	5	1	2	19	41	30	3
			2	20	44	32	3
Understanding of Concepts	5	1	2	10	39	40	3
			2	11	41	42	3
Application of Mathematical Procedures	5	1	1	10	39	40	4
			1	11	41	43	4
Communication of Required Knowledge	5	1	3	22	43	23	3
			3	23	46	24	3
Overall Level of Achievement in Mathematics	5	1	4	10	39	37	3
			4	10	42	40	4
Mathematics Strands							
Number Sense and Numeration	5	1	2	16	36	35	5
			2	17	38	37	5
Measurement	5	1	2	13	42	34	3
			2	14	44	36	3
Geometry and Spatial Sense	5	1	4	12	41	34	3
			4	13	44	36	3
Patterning and Algebra	5	1	2	14	41	34	3
			2	15	43	36	3
Data Management and Probability	5	1	1	10	37	41	4
			2	11	39	44	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Hamilton-Wentworth Catholic DSB

50 Schools with Grade 3 students

90 Classes with Grade 3 students

1857 Grade 3 students

1% In English as a Second Language Program

4% Exempted in all three subjects

49% Boys 51% Girls 0% Gender not specified

8% Of the students said they speak only or mostly in another language at home

15% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	1	5	42	41	3
			2	5	45	44	4
Communication	7	1	4	7	37	40	3
			4	8	40	44	4
Organization of Ideas	7	1	3	11	35	40	4
			3	12	38	43	4
Application of Language Conventions	7	1	3	13	29	42	5
			4	14	31	45	6
Overall Level of Achievement in Reading	7	1	6	4	32	45	4
			7	5	35	49	4
Writing							
Reasoning	5	1	1	3	37	47	7
			1	3	39	50	7
Communication	5	1	1	4	36	45	7
			1	4	38	48	8
Organization of Ideas	5	1	1	4	37	45	6
			1	4	40	48	7
Application of Language Conventions	5	1	1	4	33	48	8
			1	4	35	51	9
Overall Level of Achievement in Writing	5	1	1	3	33	50	8
			1	3	35	53	8
Mathematics							
Problem Solving	5	1	2	16	41	32	4
			2	17	44	34	4
Understanding of Concepts	5	1	2	8	37	43	4
			2	9	39	46	4
Application of Mathematical Procedures	5	1	0	9	37	43	5
			0	9	39	46	5
Communication of Required Knowledge	5	1	2	18	43	28	3
			2	19	45	30	3
Overall Level of Achievement in Mathematics	5	1	3	8	37	41	5
			4	8	39	44	5
Mathematics Strands							
Number Sense and Numeration	5	1	1	14	36	37	6
			1	15	39	39	6
Measurement	5	1	2	11	40	38	4
			2	12	43	40	4
Geometry and Spatial Sense	5	1	3	9	40	39	3
			3	10	42	41	3
Patterning and Algebra	5	1	1	12	40	37	5
			1	13	42	39	5
Data Management and Probability	5	1	1	8	34	46	6
			1	8	36	49	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Hastings and Prince Edward DSB

40	Schools with Grade 3 students	0%	In English as a Second Language Program
77	Classes with Grade 3 students	5%	Exempted in all three subjects
1435	Grade 3 students	54%	Boys 46% Girls 1% Gender not specified
		2%	Of the students said they speak only or mostly in another language at home
		3%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	9	1	2	6	42	39	2
			2	6	46	43	3
Communication	9	1	5	7	39	36	3
			5	8	43	40	4
Organization of Ideas	9	1	3	13	35	35	5
			4	14	38	39	5
Application of Language Conventions	9	1	3	13	30	38	5
			4	15	34	42	6
Overall Level of Achievement in Reading	9	1	7	4	35	40	4
			7	5	38	45	5
Writing							
Reasoning	6	1	2	7	44	34	6
			2	7	47	37	6
Communication	6	1	2	8	44	32	7
			2	9	48	35	7
Organization of Ideas	6	1	2	8	46	32	5
			2	9	49	34	5
Application of Language Conventions	6	1	2	9	43	33	6
			2	10	46	35	7
Overall Level of Achievement in Writing	6	1	2	7	42	35	7
			2	7	46	38	7
Mathematics							
Problem Solving	5	0	2	15	42	33	3
			2	16	44	35	3
Understanding of Concepts	5	0	2	7	36	45	4
			2	8	38	48	4
Application of Mathematical Procedures	5	0	1	8	37	45	4
			1	8	39	48	5
Communication of Required Knowledge	5	0	3	18	43	28	3
			3	19	45	29	4
Overall Level of Achievement in Mathematics	5	0	3	7	37	42	4
			4	7	40	45	4
Mathematics Strands							
Number Sense and Numeration	5	0	2	13	35	39	5
			2	14	38	41	5
Measurement	5	0	1	11	39	40	4
			1	11	42	42	4
Geometry and Spatial Sense	5	0	3	10	41	36	4
			3	10	44	39	4
Patterning and Algebra	5	0	1	11	41	37	4
			1	11	44	40	5
Data Management and Probability	5	0	2	9	37	41	5
			2	10	40	44	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Huron-Perth Catholic DSB

15 Schools with Grade 3 students

22 Classes with Grade 3 students

379 Grade 3 students

1% In English as a Second Language Program

5% Exempted in all three subjects

51% Boys 47% Girls 2% Gender not specified

1% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	1	1	6	47	37	2
			1	6	50	40	2
Communication	5	1	5	5	41	40	3
			5	6	44	42	3
Organization of Ideas	5	1	4	9	39	39	3
			4	10	41	41	3
Application of Language Conventions	5	1	2	14	35	39	4
			2	15	37	41	4
Overall Level of Achievement in Reading	5	1	7	3	38	43	4
			7	3	41	46	4
Writing							
Reasoning	5	0	2	5	40	43	5
			2	5	42	46	6
Communication	5	0	2	6	40	41	6
			2	6	42	43	6
Organization of Ideas	5	0	2	4	45	38	5
			2	5	48	40	6
Application of Language Conventions	5	0	2	6	42	39	7
			2	6	44	41	7
Overall Level of Achievement in Writing	5	0	2	3	41	42	6
			2	4	43	45	7
Mathematics							
Problem Solving	5	0	0	11	45	36	2
			0	12	48	38	2
Understanding of Concepts	5	0	1	6	37	49	2
			1	7	39	51	2
Application of Mathematical Procedures	5	0	0	6	36	49	5
			0	6	38	51	5
Communication of Required Knowledge	5	0	1	15	47	29	3
			1	16	49	31	3
Overall Level of Achievement in Mathematics	5	0	1	6	38	46	3
			1	6	40	49	3
Mathematics Strands							
Number Sense and Numeration	5	0	1	11	39	37	6
			1	12	41	39	6
Measurement	5	0	2	7	40	43	2
			2	8	42	45	2
Geometry and Spatial Sense	5	0	2	7	46	38	2
			2	8	48	40	2
Patterning and Algebra	5	0	1	7	40	45	2
			1	7	42	48	2
Data Management and Probability	5	0	2	5	30	53	6
			2	5	31	56	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Huron-Superior Catholic DSB

24	Schools with Grade 3 students	0%	In English as a Second Language Program
32	Classes with Grade 3 students	2%	Exempted in all three subjects
542	Grade 3 students	52%	Boys 48% Girls 0% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home
		7%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	3	1	3	9	46	35	2
			3	10	48	36	2
Communication	3	1	10	11	39	34	2
			10	12	40	35	2
Organization of Ideas	3	1	6	17	37	35	2
			6	17	38	36	2
Application of Language Conventions	3	1	6	19	33	36	4
			6	19	34	37	4
Overall Level of Achievement in Reading	3	1	13	8	35	39	2
			13	8	36	40	2
Writing							
Reasoning	2	1	1	5	47	41	3
			1	5	49	42	3
Communication	2	1	1	6	46	38	5
			1	7	47	39	6
Organization of Ideas	2	1	1	8	46	38	4
			1	8	48	39	4
Application of Language Conventions	2	1	1	5	46	39	5
			1	6	47	40	6
Overall Level of Achievement in Writing	2	1	1	4	44	43	5
			1	4	45	44	5
Mathematics							
Problem Solving	2	1	3	26	45	22	1
			3	27	47	22	1
Understanding of Concepts	2	1	4	14	41	36	1
			4	14	43	37	2
Application of Mathematical Procedures	2	1	1	14	45	36	1
			1	14	47	37	2
Communication of Required Knowledge	2	1	7	28	43	17	1
			7	29	44	18	2
Overall Level of Achievement in Mathematics	2	1	8	12	44	31	2
			9	13	45	32	2
Mathematics Strands							
Number Sense and Numeration	2	1	3	22	39	32	1
			3	22	40	33	2
Measurement	2	1	3	18	47	29	1
			3	18	48	29	1
Geometry and Spatial Sense	2	1	10	15	42	30	1
			10	15	43	31	1
Patterning and Algebra	2	1	1	17	46	31	2
			1	17	47	32	2
Data Management and Probability	2	1	3	11	43	38	3
			3	11	44	39	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Kawartha Pine Ridge DSB

74 Schools with Grade 3 students

153 Classes with Grade 3 students

2873 Grade 3 students

2% In English as a Second Language Program

3% Exempted in all three subjects

52% Boys 48% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

3% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	5	1	2	6	43	40	3
			2	6	45	42	3
Communication	5	1	5	8	42	37	3
			5	9	44	39	3
Organization of Ideas	5	1	3	12	37	38	4
			3	13	39	40	4
Application of Language Conventions	5	1	3	14	31	41	5
			4	15	33	44	5
Overall Level of Achievement in Reading	5	1	7	5	36	43	4
			7	5	38	46	4
Writing							
Reasoning	3	1	2	5	42	41	6
			2	6	44	43	6
Communication	3	1	2	7	41	39	7
			2	7	43	41	8
Organization of Ideas	3	1	2	7	43	39	5
			2	7	45	40	6
Application of Language Conventions	3	1	2	8	40	39	7
			2	9	42	41	7
Overall Level of Achievement in Writing	3	1	2	5	39	43	7
			2	5	41	45	7
Mathematics							
Problem Solving	3	1	1	15	39	36	4
			2	16	41	38	4
Understanding of Concepts	3	1	2	7	34	47	5
			2	8	36	49	5
Application of Mathematical Procedures	3	1	1	8	35	46	5
			1	8	37	48	6
Communication of Required Knowledge	3	1	3	18	43	28	4
			3	19	45	29	4
Overall Level of Achievement in Mathematics	3	1	3	7	35	45	5
			4	8	37	47	5
Mathematics Strands							
Number Sense and Numeration	3	1	2	12	34	42	6
			2	12	36	44	6
Measurement	3	1	1	12	38	40	4
			2	12	40	42	5
Geometry and Spatial Sense	3	1	4	10	39	39	4
			4	11	40	41	4
Patterning and Algebra	3	1	2	11	39	38	5
			2	11	41	40	6
Data Management and Probability	3	1	1	9	34	45	6
			1	9	36	48	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Keewatin-Patricia DSB

22	Schools with Grade 3 students	1%	In English as a Second Language Program		
38	Classes with Grade 3 students	6%	Exempted in all three subjects		
536	Grade 3 students	51%	Boys	48% Girls	0% Gender not specified
		2%	Of the students said they speak only or mostly in another language at home		
		6%	Of the students said they speak as often in English as in another language at home		

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	8	2	4	12	47	25	1
			4	14	53	28	1
Communication	8	2	8	15	40	25	2
			9	17	44	28	2
Organization of Ideas	8	2	7	21	35	25	2
			7	23	39	28	2
Application of Language Conventions	8	2	6	22	32	26	4
			7	25	35	29	4
Overall Level of Achievement in Reading	8	2	12	10	38	29	2
			14	11	42	32	2
Writing							
Reasoning	7	2	5	9	46	27	4
			6	10	50	30	4
Communication	7	2	5	11	42	28	4
			6	12	47	30	5
Organization of Ideas	7	2	5	12	45	25	4
			6	13	49	28	4
Application of Language Conventions	7	2	5	11	42	27	5
			6	12	47	30	6
Overall Level of Achievement in Writing	7	2	5	9	43	30	4
			6	10	47	33	5
Mathematics							
Problem Solving	6	3	3	27	39	21	1
			3	30	43	23	1
Understanding of Concepts	6	3	4	17	39	28	2
			4	19	43	31	3
Application of Mathematical Procedures	6	3	2	17	39	30	3
			2	19	43	33	3
Communication of Required Knowledge	6	3	4	32	40	13	1
			4	35	44	14	2
Overall Level of Achievement in Mathematics	6	3	7	17	39	26	2
			7	19	43	29	2
Mathematics Strands							
Number Sense and Numeration	6	3	3	24	35	26	3
			3	26	39	29	3
Measurement	6	3	2	22	42	23	1
			3	24	46	26	2
Geometry and Spatial Sense	6	3	6	22	39	24	1
			6	24	43	26	1
Patterning and Algebra	6	3	3	18	40	28	1
			3	20	44	31	2
Data Management and Probability	6	3	4	17	37	31	2
			4	19	40	34	2

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Kenora Catholic DSB

4	Schools with Grade 3 students	0%	In English as a Second Language Program
8	Classes with Grade 3 students	10%	Exempted in all three subjects
103	Grade 3 students	46% Boys	54% Girls 0% Gender not specified
		7%	Of the students said they speak only or mostly in another language at home
		11%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	18	0	2	8	46	26	0
			2	10	56	32	0
Communication	18	0	4	11	46	21	0
			5	13	56	26	0
Organization of Ideas	18	0	3	12	40	27	0
			4	14	49	33	0
Application of Language Conventions	18	0	4	20	28	28	1
			5	25	35	35	1
Overall Level of Achievement in Reading	18	0	9	6	40	27	0
			11	7	49	33	0
Writing							
Reasoning	12	1	2	4	43	39	0
			2	4	49	44	0
Communication	12	1	2	4	47	34	1
			2	4	53	39	1
Organization of Ideas	12	1	2	8	44	34	0
			2	9	50	39	0
Application of Language Conventions	12	1	2	8	42	34	2
			2	9	48	39	2
Overall Level of Achievement in Writing	12	1	2	3	41	42	0
			2	3	47	48	0
Mathematics							
Problem Solving	10	3	2	22	40	23	0
			2	26	46	27	0
Understanding of Concepts	10	3	4	17	30	35	1
			4	20	34	40	1
Application of Mathematical Procedures	10	3	1	17	31	37	1
			1	20	36	42	1
Communication of Required Knowledge	10	3	6	26	39	16	1
			7	30	44	18	1
Overall Level of Achievement in Mathematics	10	3	9	14	31	34	0
			10	16	36	39	0
Mathematics Strands							
Number Sense and Numeration	10	3	2	21	31	33	0
			2	24	36	38	0
Measurement	10	3	1	22	34	29	1
			1	26	39	33	1
Geometry and Spatial Sense	10	3	9	17	38	23	0
			10	20	43	27	0
Patterning and Algebra	10	3	4	17	27	38	1
			4	20	31	43	1
Data Management and Probability	10	3	2	17	34	35	0
			2	19	39	40	0

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Lakehead DSB

32	Schools with Grade 3 students	2%	In English as a Second Language Program
58	Classes with Grade 3 students	2%	Exempted in all three subjects
1087	Grade 3 students	49% Boys	50% Girls 1% Gender not specified
		2%	Of the students said they speak only or mostly in another language at home
		7%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	3	1	4	9	44	37	2
			4	9	46	38	2
Communication	3	1	10	10	40	34	2
			10	11	42	35	2
Organization of Ideas	3	1	6	14	38	36	3
			6	14	39	38	3
Application of Language Conventions	3	1	8	16	32	37	4
			8	17	33	38	4
Overall Level of Achievement in Reading	3	1	13	5	36	39	3
			14	6	37	41	3
Writing							
Reasoning	2	1	3	7	48	34	3
			4	8	50	36	3
Communication	2	1	3	8	47	34	4
			4	9	48	35	4
Organization of Ideas	2	1	3	9	49	33	3
			4	9	50	34	3
Application of Language Conventions	2	1	3	9	43	36	5
			4	10	45	37	5
Overall Level of Achievement in Writing	2	1	3	7	45	38	4
			4	7	46	39	4
Mathematics							
Problem Solving	2	1	3	19	41	32	1
			4	20	43	33	1
Understanding of Concepts	2	1	4	12	38	41	2
			4	12	39	43	2
Application of Mathematical Procedures	2	1	1	12	40	41	3
			1	12	42	42	3
Communication of Required Knowledge	2	1	6	25	43	22	1
			6	26	45	22	1
Overall Level of Achievement in Mathematics	2	1	7	10	38	40	2
			8	10	39	42	2
Mathematics Strands							
Number Sense and Numeration	2	1	2	17	33	41	3
			3	18	34	43	3
Measurement	2	1	3	17	41	34	2
			3	18	43	35	2
Geometry and Spatial Sense	2	1	7	14	40	34	1
			8	15	42	35	1
Patterning and Algebra	2	1	3	13	43	36	2
			3	14	44	37	2
Data Management and Probability	2	1	4	13	37	40	3
			4	14	38	41	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Lambton Kent District Public School Board

63 Schools with Grade 3 students

109 Classes with Grade 3 students

1879 Grade 3 students

1% In English as a Second Language Program

2% Exempted in all three subjects

50% Boys 49% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

4% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	3	1	2	8	44	37	3
			3	8	47	39	3
Communication	3	1	8	7	43	35	3
			8	7	45	36	3
Organization of Ideas	3	1	5	15	37	35	3
			5	16	39	37	3
Application of Language Conventions	3	1	6	15	35	35	4
			6	16	37	36	5
Overall Level of Achievement in Reading	3	1	11	5	37	39	3
			12	5	39	40	4
Writing							
Reasoning	2	2	2	5	47	38	4
			3	6	49	39	4
Communication	2	2	2	7	47	35	5
			3	7	49	37	5
Organization of Ideas	2	2	2	8	46	36	4
			3	8	48	37	4
Application of Language Conventions	2	2	2	8	42	39	5
			3	8	44	40	5
Overall Level of Achievement in Writing	2	2	2	5	43	41	5
			3	5	45	42	5
Mathematics							
Problem Solving	2	2	3	21	43	27	2
			3	22	45	28	2
Understanding of Concepts	2	2	3	11	40	39	3
			3	11	42	40	3
Application of Mathematical Procedures	2	2	1	12	41	39	3
			1	13	43	40	3
Communication of Required Knowledge	2	2	5	24	44	22	2
			5	25	46	22	2
Overall Level of Achievement in Mathematics	2	2	6	10	42	35	3
			7	11	43	37	3
Mathematics Strands							
Number Sense and Numeration	2	2	2	18	39	33	4
			2	18	40	34	4
Measurement	2	2	2	15	42	35	2
			2	15	44	37	2
Geometry and Spatial Sense	2	2	5	13	43	33	2
			6	13	44	35	2
Patterning and Algebra	2	2	3	16	44	30	3
			3	17	46	31	3
Data Management and Probability	2	2	2	13	39	39	3
			2	13	40	41	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Limestone DSB

51 Schools with Grade 3 students

105 Classes with Grade 3 students

1611 Grade 3 students

1% In English as a Second Language Program

3% Exempted in all three subjects

48% Boys 52% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

3% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	8	1	3	8	41	36	3
			3	9	45	39	4
Communication	8	1	7	9	38	32	4
			8	10	41	36	5
Organization of Ideas	8	1	7	14	32	33	5
			7	16	35	37	5
Application of Language Conventions	8	1	6	17	30	34	5
			6	18	33	37	6
Overall Level of Achievement in Reading	8	1	11	6	33	37	4
			12	7	36	40	5
Writing							
Reasoning	4	1	2	7	46	34	5
			2	8	49	36	5
Communication	4	1	2	9	45	32	7
			2	9	48	34	7
Organization of Ideas	4	1	2	9	47	32	5
			2	9	50	34	5
Application of Language Conventions	4	1	2	11	44	31	7
			2	12	47	33	7
Overall Level of Achievement in Writing	4	1	2	7	43	36	6
			2	8	46	39	7
Mathematics							
Problem Solving	4	2	2	19	41	29	3
			2	20	44	31	3
Understanding of Concepts	4	2	2	10	37	39	5
			3	11	40	41	5
Application of Mathematical Procedures	4	2	1	12	37	39	5
			1	13	39	42	5
Communication of Required Knowledge	4	2	5	22	41	23	3
			5	23	44	25	3
Overall Level of Achievement in Mathematics	4	2	6	10	37	36	5
			6	10	40	39	5
Mathematics Strands							
Number Sense and Numeration	4	2	2	17	36	34	6
			2	18	38	36	6
Measurement	4	2	2	14	40	35	4
			2	15	42	37	4
Geometry and Spatial Sense	4	2	6	12	39	32	4
			7	13	42	35	4
Patterning and Algebra	4	2	2	15	40	33	4
			2	16	43	35	4
Data Management and Probability	4	2	2	12	35	40	5
			2	13	38	43	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: London District Catholic School Board

43 Schools with Grade 3 students

84 Classes with Grade 3 students

1564 Grade 3 students

1% In English as a Second Language Program

4% Exempted in all three subjects

52% Boys 47% Girls 1% Gender not specified

7% Of the students said they speak only or mostly in another language at home

12% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	2	8	46	33	2
			2	9	51	36	2
Communication	7	1	7	11	42	30	2
			8	12	45	33	2
Organization of Ideas	7	1	5	15	38	31	2
			6	17	42	34	3
Application of Language Conventions	7	1	5	17	36	32	2
			5	19	39	34	3
Overall Level of Achievement in Reading	7	1	10	7	37	35	2
			11	8	41	38	2
Writing							
Reasoning	5	1	4	6	48	33	3
			4	6	51	35	3
Communication	5	1	4	7	48	32	4
			4	7	51	34	4
Organization of Ideas	5	1	4	7	49	30	3
			4	8	53	32	3
Application of Language Conventions	5	1	4	9	45	32	4
			4	10	48	34	4
Overall Level of Achievement in Writing	5	1	4	5	46	35	4
			4	6	49	37	4
Mathematics							
Problem Solving	5	1	2	20	45	26	2
			2	21	47	28	2
Understanding of Concepts	5	1	2	9	42	38	2
			2	10	45	41	3
Application of Mathematical Procedures	5	1	1	10	42	40	2
			1	10	45	42	2
Communication of Required Knowledge	5	1	3	22	46	22	1
			3	23	49	23	1
Overall Level of Achievement in Mathematics	5	1	5	9	42	36	2
			5	9	45	38	2
Mathematics Strands							
Number Sense and Numeration	5	1	2	17	38	36	2
			2	18	40	38	2
Measurement	5	1	2	13	44	33	2
			2	14	47	35	2
Geometry and Spatial Sense	5	1	4	12	43	34	2
			5	13	45	36	2
Patterning and Algebra	5	1	1	14	45	31	2
			1	15	48	33	2
Data Management and Probability	5	1	1	12	38	40	3
			2	12	40	42	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Near North DSB

36	Schools with Grade 3 students	0%	In English as a Second Language Program
61	Classes with Grade 3 students	4%	Exempted in all three subjects
974	Grade 3 students	52%	Boys 48% Girls 1% Gender not specified
		2%	Of the students said they speak only or mostly in another language at home
		5%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	8	1	3	8	49	30	2
			3	8	54	33	2
Communication	8	1	8	9	45	27	2
			8	10	49	30	2
Organization of Ideas	8	1	7	13	39	30	2
			8	14	43	33	3
Application of Language Conventions	8	1	5	16	36	31	3
			5	18	39	35	4
Overall Level of Achievement in Reading	8	1	12	5	37	34	2
			13	6	41	38	3
Writing							
Reasoning	6	1	3	6	45	37	3
			3	6	48	39	3
Communication	6	1	3	8	43	36	4
			3	8	46	38	4
Organization of Ideas	6	1	3	7	45	34	3
			3	8	49	37	3
Application of Language Conventions	6	1	3	10	43	33	4
			3	11	46	35	4
Overall Level of Achievement in Writing	6	1	3	6	42	38	4
			3	6	45	41	4
Mathematics							
Problem Solving	5	2	3	20	41	27	2
			3	21	44	29	2
Understanding of Concepts	5	2	5	11	39	37	2
			5	11	41	40	3
Application of Mathematical Procedures	5	2	1	11	41	37	3
			1	11	44	40	3
Communication of Required Knowledge	5	2	4	25	45	18	2
			5	27	48	19	2
Overall Level of Achievement in Mathematics	5	2	6	9	40	35	2
			7	10	43	37	2
Mathematics Strands							
Number Sense and Numeration	5	2	3	14	40	33	2
			3	15	43	35	2
Measurement	5	2	2	17	41	32	2
			2	18	44	34	2
Geometry and Spatial Sense	5	2	7	12	42	30	2
			8	13	45	32	2
Patterning and Algebra	5	2	2	15	43	30	2
			3	16	46	33	2
Data Management and Probability	5	2	3	11	39	37	3
			3	12	42	39	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Niagara Catholic DSB

46	Schools with Grade 3 students	1%	In English as a Second Language Program
75	Classes with Grade 3 students	1%	Exempted in all three subjects
1666	Grade 3 students	52%	Boys 48% Girls 0% Gender not specified
		4%	Of the students said they speak only or mostly in another language at home
		10%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	1	1	2	5	41	46	4
			2	5	42	47	4
Communication	1	1	5	7	35	46	5
			5	7	36	47	5
Organization of Ideas	1	1	3	9	35	45	6
			3	9	36	46	6
Application of Language Conventions	1	1	3	13	30	46	7
			3	13	30	46	7
Overall Level of Achievement in Reading	1	1	7	4	31	50	7
			7	4	32	51	7
Writing							
Reasoning	1	1	2	4	41	43	7
			2	4	42	44	7
Communication	1	1	2	5	39	44	8
			2	5	40	45	8
Organization of Ideas	1	1	2	5	42	43	6
			2	5	43	44	6
Application of Language Conventions	1	1	2	6	38	45	7
			2	6	38	46	7
Overall Level of Achievement in Writing	1	1	2	4	37	48	8
			2	4	38	49	8
Mathematics							
Problem Solving	1	1	2	14	42	37	4
			2	14	43	37	4
Understanding of Concepts	1	1	2	7	39	46	5
			2	7	39	47	5
Application of Mathematical Procedures	1	1	0	8	39	47	5
			0	8	39	48	5
Communication of Required Knowledge	1	1	3	17	44	31	4
			3	17	44	32	4
Overall Level of Achievement in Mathematics	1	1	3	7	39	45	5
			3	7	40	45	5
Mathematics Strands							
Number Sense and Numeration	1	1	2	12	36	42	7
			2	12	36	43	7
Measurement	1	1	1	11	41	41	4
			1	11	41	42	4
Geometry and Spatial Sense	1	1	3	9	41	42	3
			3	9	42	43	4
Patterning and Algebra	1	1	2	11	41	41	5
			2	11	41	41	5
Data Management and Probability	1	1	1	8	34	49	7
			1	8	34	50	7

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Nipissing-Parry Sound Catholic DSB

9	Schools with Grade 3 students	0%	In English as a Second Language Program
16	Classes with Grade 3 students	5%	Exempted in all three subjects
236	Grade 3 students	55%	Boys 44% Girls 0% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home
		7%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	10	1	3	6	43	36	2
			3	7	48	40	2
Communication	10	1	6	4	38	39	2
			7	4	42	44	2
Organization of Ideas	10	1	3	10	38	35	3
			3	11	42	40	3
Application of Language Conventions	10	1	3	13	28	42	3
			4	14	31	47	4
Overall Level of Achievement in Reading	10	1	8	3	32	44	1
			10	3	36	50	1
Writing							
Reasoning	7	0	3	5	47	33	4
			3	5	51	36	5
Communication	7	0	3	6	46	32	5
			3	7	50	35	5
Organization of Ideas	7	0	3	6	47	33	4
			3	6	50	36	4
Application of Language Conventions	7	0	3	6	45	33	6
			3	7	49	35	6
Overall Level of Achievement in Writing	7	0	3	6	44	36	4
			3	6	48	39	5
Mathematics							
Problem Solving	5	0	3	16	41	32	2
			3	17	43	34	2
Understanding of Concepts	5	0	3	8	40	43	1
			3	8	43	45	1
Application of Mathematical Procedures	5	0	1	10	40	42	2
			1	10	42	44	2
Communication of Required Knowledge	5	0	5	20	44	23	3
			5	21	46	25	3
Overall Level of Achievement in Mathematics	5	0	6	8	39	40	2
			6	9	41	43	2
Mathematics Strands							
Number Sense and Numeration	5	0	2	15	33	39	5
			2	16	35	41	5
Measurement	5	0	2	14	41	36	2
			2	15	43	38	2
Geometry and Spatial Sense	5	0	7	8	42	36	0
			8	9	45	38	0
Patterning and Algebra	5	0	3	11	46	33	2
			3	12	48	35	2
Data Management and Probability	5	0	2	10	35	44	3
			2	11	37	47	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Northeastern Catholic DSB

9 Schools with Grade 3 students

12 Classes with Grade 3 students

205 Grade 3 students

1% In English as a Second Language Program

3% Exempted in all three subjects

54% Boys 45% Girls 1% Gender not specified

4% Of the students said they speak only or mostly in another language at home

14% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	1	10	12	46	25	0
			10	12	49	27	1
Communication	5	1	14	13	45	20	1
			15	14	48	22	1
Organization of Ideas	5	1	15	23	33	22	1
			16	25	35	23	1
Application of Language Conventions	5	1	16	24	30	23	1
			17	26	32	24	1
Overall Level of Achievement in Reading	5	1	20	9	37	27	0
			22	9	39	29	1
Writing							
Reasoning	5	1	4	8	51	27	3
			5	9	54	28	4
Communication	5	1	4	14	47	25	4
			5	15	50	26	5
Organization of Ideas	5	1	4	11	50	26	3
			5	11	53	27	4
Application of Language Conventions	5	1	4	11	45	30	3
			5	12	48	32	3
Overall Level of Achievement in Writing	5	1	4	9	47	30	4
			5	9	50	32	4
Mathematics							
Problem Solving	3	0	6	31	44	15	0
			7	32	46	15	0
Understanding of Concepts	3	0	5	21	42	25	1
			6	22	44	26	2
Application of Mathematical Procedures	3	0	2	24	42	26	2
			3	25	44	27	2
Communication of Required Knowledge	3	0	9	36	40	11	0
			10	37	42	12	0
Overall Level of Achievement in Mathematics	3	0	11	19	44	22	0
			11	19	46	23	1
Mathematics Strands							
Number Sense and Numeration	3	0	4	32	38	21	1
			4	33	40	22	1
Measurement	3	0	3	26	45	21	1
			3	27	47	22	1
Geometry and Spatial Sense	3	0	11	21	40	23	0
			12	22	42	24	1
Patterning and Algebra	3	0	5	25	45	21	0
			5	26	47	22	0
Data Management and Probability	3	0	4	24	37	29	1
			5	25	39	30	1

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Northwest Catholic DSB

4 Schools with Grade 3 students

9 Classes with Grade 3 students

170 Grade 3 students

0% In English as a Second Language Program

4% Exempted in all three subjects

58% Boys 42% Girls 1% Gender not specified

5% Of the students said they speak only or mostly in another language at home

4% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	5	1	1	6	49	36	1
			1	6	53	38	1
Communication	5	1	5	10	45	32	1
			6	11	48	34	1
Organization of Ideas	5	1	1	19	38	34	1
			1	21	41	36	1
Application of Language Conventions	5	1	2	22	42	26	1
			3	24	45	28	1
Overall Level of Achievement in Reading	5	1	7	7	42	36	1
			8	8	45	39	1
Writing							
Reasoning	4	2	0	9	49	35	2
			0	9	52	37	2
Communication	4	2	0	8	50	34	3
			0	8	53	36	3
Organization of Ideas	4	2	0	8	50	35	1
			0	9	53	37	1
Application of Language Conventions	4	2	0	9	45	37	3
			0	10	48	39	3
Overall Level of Achievement in Writing	4	2	0	6	44	42	2
			0	6	47	44	2
Mathematics							
Problem Solving	6	1	1	24	46	22	1
			1	25	49	24	1
Understanding of Concepts	6	1	0	14	42	37	1
			0	15	45	40	1
Application of Mathematical Procedures	6	1	0	15	41	36	1
			0	16	44	39	1
Communication of Required Knowledge	6	1	3	28	45	16	1
			3	30	49	17	1
Overall Level of Achievement in Mathematics	6	1	3	15	39	35	1
			3	16	42	38	1
Mathematics Strands							
Number Sense and Numeration	6	1	0	19	37	35	2
			0	20	40	37	3
Measurement	6	1	2	16	48	25	2
			3	17	51	27	2
Geometry and Spatial Sense	6	1	0	21	46	25	1
			0	22	50	27	1
Patterning and Algebra	6	1	1	19	44	29	0
			1	20	47	31	0
Data Management and Probability	6	1	1	14	42	36	1
			1	15	45	39	1

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Ottawa-Carleton DSB

105 Schools with Grade 3 students

274 Classes with Grade 3 students

5167 Grade 3 students

8% In English as a Second Language Program

3% Exempted in all three subjects

51% Boys 48% Girls 0% Gender not specified

9% Of the students said they speak only or mostly in another language at home

14% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	1	2	7	45	39	3
			2	7	47	41	3
Communication	4	1	6	8	40	39	3
			6	8	42	41	3
Organization of Ideas	4	1	4	14	36	37	3
			5	14	38	39	4
Application of Language Conventions	4	1	4	14	33	39	5
			4	15	35	41	5
Overall Level of Achievement in Reading	4	1	9	5	34	43	3
			9	5	36	45	4
Writing							
Reasoning	4	1	3	3	41	42	7
			3	3	43	44	7
Communication	4	1	3	4	40	40	9
			3	4	42	42	9
Organization of Ideas	4	1	3	4	42	40	6
			3	4	44	42	7
Application of Language Conventions	4	1	3	5	38	41	8
			3	5	40	44	9
Overall Level of Achievement in Writing	4	1	3	3	37	45	8
			3	3	39	47	9
Mathematics							
Problem Solving	4	3	2	19	40	29	2
			2	21	43	31	3
Understanding of Concepts	4	3	3	11	36	40	3
			3	12	39	43	3
Application of Mathematical Procedures	4	3	1	12	37	40	3
			1	13	40	43	3
Communication of Required Knowledge	4	3	4	23	41	23	2
			4	24	44	25	3
Overall Level of Achievement in Mathematics	4	3	5	11	36	38	3
			6	11	39	41	3
Mathematics Strands							
Number Sense and Numeration	4	3	2	17	36	34	4
			2	18	39	36	5
Measurement	4	3	2	14	39	35	3
			2	15	42	38	3
Geometry and Spatial Sense	4	3	6	14	38	33	3
			6	15	41	35	3
Patterning and Algebra	4	3	2	14	39	34	3
			3	15	42	37	3
Data Management and Probability	4	3	2	13	35	40	4
			2	14	37	43	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Ottawa-Carleton District Catholic School Board

59	Schools with Grade 3 students	3%	In English as a Second Language Program
115	Classes with Grade 3 students	3%	Exempted in all three subjects
2571	Grade 3 students	51% Boys	48% Girls 1% Gender not specified
		7%	Of the students said they speak only or mostly in another language at home
		15%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	5	1	2	6	41	43	3
			2	6	43	46	3
Communication	5	1	6	7	39	39	4
			6	8	41	41	4
Organization of Ideas	5	1	4	12	35	39	4
			4	13	37	42	4
Application of Language Conventions	5	1	4	14	32	40	5
			4	14	34	42	5
Overall Level of Achievement in Reading	5	1	9	5	33	45	4
			9	5	35	47	4
Writing							
Reasoning	4	1	2	4	43	41	6
			3	4	45	43	6
Communication	4	1	2	4	43	40	6
			3	5	45	41	7
Organization of Ideas	4	1	2	5	44	39	5
			3	5	46	41	6
Application of Language Conventions	4	1	2	5	41	40	7
			3	5	43	42	8
Overall Level of Achievement in Writing	4	1	2	3	40	44	6
			3	3	42	46	7
Mathematics							
Problem Solving	4	1	2	19	45	27	2
			2	20	47	29	2
Understanding of Concepts	4	1	2	10	39	41	3
			2	11	41	43	3
Application of Mathematical Procedures	4	1	1	11	40	40	3
			1	12	42	42	3
Communication of Required Knowledge	4	1	3	22	45	24	2
			3	23	47	25	2
Overall Level of Achievement in Mathematics	4	1	4	10	40	38	3
			5	11	42	40	3
Mathematics Strands							
Number Sense and Numeration	4	1	2	16	39	35	3
			3	16	41	37	3
Measurement	4	1	2	13	41	37	3
			2	13	43	39	3
Geometry and Spatial Sense	4	1	4	12	44	34	2
			4	12	46	36	2
Patterning and Algebra	4	1	3	15	43	33	3
			3	15	45	34	3
Data Management and Probability	4	1	1	11	38	41	4
			1	11	40	43	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Peel DSB of Education

119 Schools with Grade 3 students

347 Classes with Grade 3 students

7439 Grade 3 students

16% In English as a Second Language Program

2% Exempted in all three subjects

51% Boys 49% Girls 0% Gender not specified

10% Of the students said they speak only or mostly in another language at home

18% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	2	0	1	6	41	46	4
			1	6	42	47	4
Communication	2	0	3	7	38	44	6
			3	7	39	45	6
Organization of Ideas	2	0	2	11	36	43	6
			2	11	37	44	6
Application of Language Conventions	2	0	3	13	31	45	6
			3	13	31	46	7
Overall Level of Achievement in Reading	2	0	5	5	33	49	6
			5	5	34	50	6
Writing							
Reasoning	2	1	1	4	40	46	8
			1	4	41	47	8
Communication	2	1	1	5	40	43	8
			1	5	41	44	9
Organization of Ideas	2	1	1	5	42	43	7
			1	5	43	44	7
Application of Language Conventions	2	1	1	6	40	43	8
			1	6	41	44	8
Overall Level of Achievement in Writing	2	1	1	4	36	48	8
			1	4	37	49	9
Mathematics							
Problem Solving	2	1	1	13	39	39	5
			1	14	40	40	5
Understanding of Concepts	2	1	1	7	32	51	6
			1	7	33	52	7
Application of Mathematical Procedures	2	1	0	7	34	49	8
			0	7	34	50	8
Communication of Required Knowledge	2	1	2	15	42	34	5
			2	15	43	35	6
Overall Level of Achievement in Mathematics	2	1	2	7	34	48	7
			2	7	34	49	7
Mathematics Strands							
Number Sense and Numeration	2	1	1	12	33	43	9
			1	12	33	44	9
Measurement	2	1	1	10	37	44	6
			1	10	38	45	6
Geometry and Spatial Sense	2	1	2	8	37	45	5
			2	8	38	46	5
Patterning and Algebra	2	1	1	10	38	43	6
			1	10	38	44	7
Data Management and Probability	2	1	1	8	32	48	8
			1	9	33	49	9

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Peterborough Victoria Northumberland and Clarington CDSB

28 Schools with Grade 3 students

50 Classes with Grade 3 students

968 Grade 3 students

1% In English as a Second Language Program

2% Exempted in all three subjects

55% Boys 45% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	0	1	10	47	36	2
			1	10	49	38	2
Communication	5	0	4	11	41	36	3
			4	12	43	38	3
Organization of Ideas	5	0	3	18	38	32	4
			3	19	40	34	4
Application of Language Conventions	5	0	3	20	33	35	4
			3	21	35	37	4
Overall Level of Achievement in Reading	5	0	6	9	39	38	3
			7	9	41	40	3
Writing							
Reasoning	3	0	3	7	45	37	4
			3	8	47	38	4
Communication	3	0	3	8	44	38	5
			3	8	45	39	5
Organization of Ideas	3	0	3	8	47	36	3
			3	8	48	37	4
Application of Language Conventions	3	0	3	11	42	38	4
			3	11	43	39	4
Overall Level of Achievement in Writing	3	0	3	6	43	41	4
			3	7	44	42	4
Mathematics							
Problem Solving	3	1	1	22	47	25	1
			1	23	49	26	1
Understanding of Concepts	3	1	2	14	42	37	1
			2	14	44	39	1
Application of Mathematical Procedures	3	1	1	14	42	37	2
			1	15	44	39	2
Communication of Required Knowledge	3	1	2	29	43	21	1
			2	31	44	21	1
Overall Level of Achievement in Mathematics	3	1	3	13	44	35	1
			4	13	46	36	2
Mathematics Strands							
Number Sense and Numeration	3	1	2	22	39	31	2
			2	23	41	33	2
Measurement	3	1	1	19	42	33	2
			1	20	44	34	2
Geometry and Spatial Sense	3	1	3	16	45	32	1
			3	16	47	33	1
Patterning and Algebra	3	1	1	17	43	33	1
			2	18	45	34	1
Data Management and Probability	3	1	1	15	39	38	3
			1	15	41	40	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Rainbow District School Board

32 Schools with Grade 3 students

49 Classes with Grade 3 students

813 Grade 3 students

0% In English as a Second Language Program

6% Exempted in all three subjects

54% Boys 46% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

7% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	9	1	3	9	45	31	1
			3	11	50	35	1
Communication	9	1	8	11	40	29	2
			9	12	44	32	2
Organization of Ideas	9	1	6	17	35	29	2
			7	19	39	32	2
Application of Language Conventions	9	1	7	17	32	30	3
			8	19	36	34	4
Overall Level of Achievement in Reading	9	1	13	7	34	34	2
			14	8	38	38	3
Writing							
Reasoning	9	1	3	7	47	30	3
			3	8	52	33	4
Communication	9	1	3	7	46	31	4
			3	8	51	34	4
Organization of Ideas	9	1	3	7	49	29	3
			3	8	54	32	3
Application of Language Conventions	9	1	3	8	45	31	4
			3	9	50	34	4
Overall Level of Achievement in Writing	9	1	3	5	45	34	3
			3	6	50	37	4
Mathematics							
Problem Solving	7	1	3	18	44	25	2
			3	20	48	27	3
Understanding of Concepts	7	1	2	9	43	34	3
			3	10	47	37	3
Application of Mathematical Procedures	7	1	1	9	44	34	4
			1	10	48	37	4
Communication of Required Knowledge	7	1	4	23	45	17	3
			4	25	49	19	3
Overall Level of Achievement in Mathematics	7	1	5	8	44	31	3
			5	9	48	34	4
Mathematics Strands							
Number Sense and Numeration	7	1	3	16	37	31	4
			4	17	41	34	4
Measurement	7	1	2	14	43	31	3
			2	15	47	33	3
Geometry and Spatial Sense	7	1	4	14	41	30	3
			5	15	44	33	3
Patterning and Algebra	7	1	3	14	45	27	3
			3	15	49	30	3
Data Management and Probability	7	1	2	9	41	36	3
			2	10	45	40	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Rainy River DSB

11	Schools with Grade 3 students	0%	In English as a Second Language Program		
14	Classes with Grade 3 students	5%	Exempted in all three subjects		
208	Grade 3 students	57%	Boys	43% Girls	0% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home		
		3%	Of the students said they speak as often in English as in another language at home		

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	8	1	5	10	46	30	1
			5	11	51	33	1
Communication	8	1	7	12	41	30	1
			7	14	45	33	2
Organization of Ideas	8	1	7	17	36	29	3
			7	19	39	32	3
Application of Language Conventions	8	1	6	20	33	29	3
			7	22	36	32	3
Overall Level of Achievement in Reading	8	1	11	8	39	31	2
			12	9	43	34	3
Writing							
Reasoning	6	0	5	5	50	32	3
			5	5	53	34	3
Communication	6	0	5	8	46	32	4
			5	8	49	34	4
Organization of Ideas	6	0	5	6	49	32	3
			5	7	52	34	3
Application of Language Conventions	6	0	5	10	39	36	5
			5	11	41	38	5
Overall Level of Achievement in Writing	6	0	5	5	46	35	4
			5	5	48	37	4
Mathematics							
Problem Solving	5	1	3	21	43	25	3
			3	22	46	26	3
Understanding of Concepts	5	1	4	11	39	37	3
			4	12	42	39	3
Application of Mathematical Procedures	5	1	0	13	37	40	3
			1	14	39	43	3
Communication of Required Knowledge	5	1	5	25	41	22	1
			5	27	44	23	2
Overall Level of Achievement in Mathematics	5	1	7	12	36	36	3
			8	12	38	38	4
Mathematics Strands							
Number Sense and Numeration	5	1	1	17	38	33	4
			2	18	41	35	4
Measurement	5	1	2	12	38	38	3
			2	13	40	41	4
Geometry and Spatial Sense	5	1	7	14	39	33	1
			8	15	42	35	1
Patterning and Algebra	5	1	3	19	37	33	2
			3	20	39	35	2
Data Management and Probability	5	1	3	11	34	39	7
			4	11	36	42	7

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Renfrew County DSB

25 Schools with Grade 3 students

45 Classes with Grade 3 students

854 Grade 3 students

1% In English as a Second Language Program

3% Exempted in all three subjects

52% Boys 48% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	1	2	6	43	40	4
			2	6	46	42	4
Communication	4	1	6	7	40	38	3
			6	8	42	40	4
Organization of Ideas	4	1	4	12	36	39	4
			4	13	37	41	5
Application of Language Conventions	4	1	5	15	31	39	5
			5	15	33	41	5
Overall Level of Achievement in Reading	4	1	8	4	36	42	4
			9	5	38	44	4
Writing							
Reasoning	4	1	2	4	41	42	7
			2	4	43	44	7
Communication	4	1	2	5	38	44	7
			2	5	40	46	7
Organization of Ideas	4	1	2	5	43	40	6
			2	5	45	42	6
Application of Language Conventions	4	1	2	6	38	43	7
			2	6	40	45	7
Overall Level of Achievement in Writing	4	1	2	4	36	47	7
			2	4	38	49	7
Mathematics							
Problem Solving	3	1	3	15	39	35	3
			3	16	41	37	3
Understanding of Concepts	3	1	2	8	36	45	4
			2	9	37	47	5
Application of Mathematical Procedures	3	1	2	8	36	45	5
			2	9	38	47	5
Communication of Required Knowledge	3	1	4	18	42	29	3
			4	19	44	30	3
Overall Level of Achievement in Mathematics	3	1	5	7	36	44	4
			5	7	38	45	5
Mathematics Strands							
Number Sense and Numeration	3	1	2	13	35	40	6
			2	14	36	42	6
Measurement	3	1	2	12	40	39	4
			2	12	41	40	5
Geometry and Spatial Sense	3	1	5	9	38	39	4
			5	10	40	41	4
Patterning and Algebra	3	1	3	12	38	39	4
			3	13	39	40	5
Data Management and Probability	3	1	2	10	37	42	4
			2	11	38	44	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Renfrew County Catholic DSB

20 Schools with Grade 3 students

29 Classes with Grade 3 students

462 Grade 3 students

0% In English as a Second Language Program

3% Exempted in all three subjects

47% Boys 53% Girls 1% Gender not specified

2% Of the students said they speak only or mostly in another language at home

5% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	0	1	4	39	46	4
			1	5	41	49	5
Communication	5	0	3	6	38	43	5
			3	7	40	46	5
Organization of Ideas	5	0	3	10	35	40	6
			3	10	38	43	6
Application of Language Conventions	5	0	2	13	27	46	7
			2	14	29	49	7
Overall Level of Achievement in Reading	5	0	6	3	31	49	6
			6	4	32	51	6
Writing							
Reasoning	4	0	1	3	45	42	5
			1	3	47	44	5
Communication	4	0	1	4	43	42	6
			1	4	45	44	7
Organization of Ideas	4	0	1	5	45	41	4
			1	5	48	43	4
Application of Language Conventions	4	0	1	5	39	45	6
			1	5	41	47	6
Overall Level of Achievement in Writing	4	0	1	3	40	47	5
			1	3	42	49	5
Mathematics							
Problem Solving	4	0	1	14	37	39	4
			1	15	39	41	5
Understanding of Concepts	4	0	1	7	31	50	6
			1	7	33	53	6
Application of Mathematical Procedures	4	0	0	5	35	48	7
			0	6	37	50	7
Communication of Required Knowledge	4	0	2	17	42	32	4
			2	17	44	33	4
Overall Level of Achievement in Mathematics	4	0	2	6	35	46	6
			2	7	37	48	6
Mathematics Strands							
Number Sense and Numeration	4	0	1	13	33	43	6
			1	13	35	45	6
Measurement	4	0	1	8	35	46	5
			1	8	37	48	5
Geometry and Spatial Sense	4	0	3	8	35	45	5
			3	8	37	47	5
Patterning and Algebra	4	0	1	11	40	39	5
			1	12	41	41	5
Data Management and Probability	4	0	1	5	33	51	6
			1	5	34	53	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Simcoe County DSB

76 Schools with Grade 3 students

199 Classes with Grade 3 students

3505 Grade 3 students

1% In English as a Second Language Program

4% Exempted in all three subjects

50% Boys 49% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

3% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	3	9	46	33	1
			3	10	50	35	2
Communication	7	1	8	11	41	31	2
			8	11	44	34	2
Organization of Ideas	7	1	6	16	37	31	2
			7	17	40	33	2
Application of Language Conventions	7	1	6	18	34	31	3
			7	20	37	34	3
Overall Level of Achievement in Reading	7	1	12	6	37	35	2
			13	7	40	38	2
Writing							
Reasoning	4	1	2	8	47	34	4
			2	8	50	36	4
Communication	4	1	2	9	46	33	5
			2	10	48	34	5
Organization of Ideas	4	1	2	10	49	31	4
			2	10	51	32	4
Application of Language Conventions	4	1	2	12	44	32	4
			2	12	47	34	5
Overall Level of Achievement in Writing	4	1	2	8	44	36	5
			2	8	47	38	5
Mathematics							
Problem Solving	4	1	2	21	44	26	2
			2	22	47	27	2
Understanding of Concepts	4	1	2	12	42	37	2
			2	12	45	39	2
Application of Mathematical Procedures	4	1	1	12	42	37	3
			1	13	45	39	3
Communication of Required Knowledge	4	1	4	24	46	20	2
			4	25	48	21	2
Overall Level of Achievement in Mathematics	4	1	5	11	43	34	2
			5	11	45	36	2
Mathematics Strands							
Number Sense and Numeration	4	1	2	18	40	32	3
			3	19	42	34	3
Measurement	4	1	2	16	45	31	2
			2	17	47	32	2
Geometry and Spatial Sense	4	1	4	14	42	33	2
			5	14	45	35	2
Patterning and Algebra	4	1	2	16	45	30	2
			2	17	47	31	2
Data Management and Probability	4	1	2	14	41	36	3
			2	15	43	38	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Simcoe Muskoka Catholic DSB

33 Schools with Grade 3 students

69 Classes with Grade 3 students

1411 Grade 3 students

0% In English as a Second Language Program

5% Exempted in all three subjects

52% Boys 47% Girls 1% Gender not specified

3% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	8	1	1	6	41	41	2
			1	6	45	45	3
Communication	8	1	2	7	39	40	2
			3	8	43	44	2
Organization of Ideas	8	1	2	10	37	38	3
			3	11	41	42	3
Application of Language Conventions	8	1	3	12	31	41	4
			3	14	34	45	4
Overall Level of Achievement in Reading	8	1	4	5	34	46	3
			5	5	37	50	3
Writing							
Reasoning	5	1	2	4	42	41	5
			2	5	45	43	5
Communication	5	1	2	6	42	39	5
			2	7	45	41	6
Organization of Ideas	5	1	2	6	44	38	4
			2	6	47	41	4
Application of Language Conventions	5	1	2	8	40	38	5
			2	8	43	41	6
Overall Level of Achievement in Writing	5	1	2	4	39	44	5
			2	5	41	47	6
Mathematics							
Problem Solving	5	1	1	16	41	34	3
			1	16	44	36	3
Understanding of Concepts	5	1	2	9	35	45	4
			2	10	37	48	4
Application of Mathematical Procedures	5	1	1	9	37	44	4
			1	9	39	47	4
Communication of Required Knowledge	5	1	2	20	43	27	2
			2	21	46	29	2
Overall Level of Achievement in Mathematics	5	1	3	8	37	43	3
			3	9	39	46	3
Mathematics Strands							
Number Sense and Numeration	5	1	1	12	36	40	5
			1	12	38	43	5
Measurement	5	1	1	12	40	37	3
			1	13	43	39	4
Geometry and Spatial Sense	5	1	3	10	39	39	2
			3	11	42	42	2
Patterning and Algebra	5	1	1	11	40	39	3
			2	12	43	41	3
Data Management and Probability	5	1	1	9	35	45	5
			1	10	37	48	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: St. Clair Catholic School Board

37 Schools with Grade 3 students

62 Classes with Grade 3 students

1119 Grade 3 students

0% In English as a Second Language Program

3% Exempted in all three subjects

53% Boys 47% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	0	1	5	44	42	3
			1	5	46	45	3
Communication	5	0	2	7	42	39	4
			2	8	45	42	4
Organization of Ideas	5	0	1	11	36	42	4
			1	12	39	44	5
Application of Language Conventions	5	0	2	10	34	43	6
			2	10	36	46	6
Overall Level of Achievement in Reading	5	0	3	5	36	47	4
			3	5	38	50	4
Writing							
Reasoning	3	0	1	5	45	41	4
			1	6	47	42	4
Communication	3	0	1	6	44	40	5
			1	7	46	41	5
Organization of Ideas	3	0	1	6	47	38	3
			1	7	49	40	3
Application of Language Conventions	3	0	1	8	44	38	4
			1	8	46	40	4
Overall Level of Achievement in Writing	3	0	1	5	41	45	4
			1	5	43	47	4
Mathematics							
Problem Solving	3	1	1	10	40	40	5
			1	11	42	41	6
Understanding of Concepts	3	1	1	5	32	52	6
			1	5	33	54	6
Application of Mathematical Procedures	3	1	0	5	33	52	6
			0	5	35	54	6
Communication of Required Knowledge	3	1	1	14	44	33	5
			1	15	45	34	5
Overall Level of Achievement in Mathematics	3	1	2	5	34	50	6
			2	5	35	52	6
Mathematics Strands							
Number Sense and Numeration	3	1	1	9	33	45	9
			1	9	34	47	9
Measurement	3	1	1	7	38	47	5
			1	8	39	48	5
Geometry and Spatial Sense	3	1	2	7	37	46	5
			2	7	39	47	5
Patterning and Algebra	3	1	1	8	38	44	6
			1	8	39	46	6
Data Management and Probability	3	1	0	5	30	52	9
			0	6	31	54	9

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Sudbury Catholic DSB

24 Schools with Grade 3 students

35 Classes with Grade 3 students

621 Grade 3 students

0% In English as a Second Language Program

1% Exempted in all three subjects

48% Boys 52% Girls 0% Gender not specified

3% Of the students said they speak only or mostly in another language at home

9% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	1	1	3	10	52	32	1
			3	11	53	32	1
Communication	1	1	8	14	46	29	0
			8	14	47	30	0
Organization of Ideas	1	1	6	21	42	29	1
			6	21	42	29	1
Application of Language Conventions	1	1	7	24	35	30	3
			7	24	35	31	3
Overall Level of Achievement in Reading	1	1	12	10	43	32	1
			12	10	44	33	1
Writing							
Reasoning	1	1	8	9	48	31	3
			8	9	49	31	3
Communication	1	1	8	10	48	30	3
			8	10	48	30	3
Organization of Ideas	1	1	8	11	47	30	3
			8	11	47	31	3
Application of Language Conventions	1	1	8	12	43	32	3
			8	12	44	33	3
Overall Level of Achievement in Writing	1	1	8	8	45	34	3
			8	8	46	35	3
Mathematics							
Problem Solving	2	2	4	32	42	17	1
			4	34	44	18	1
Understanding of Concepts	2	2	3	18	47	27	1
			3	19	49	28	2
Application of Mathematical Procedures	2	2	2	20	43	29	2
			2	21	45	30	2
Communication of Required Knowledge	2	2	5	38	39	12	1
			5	40	41	13	1
Overall Level of Achievement in Mathematics	2	2	7	19	44	25	1
			7	19	46	26	1
Mathematics Strands							
Number Sense and Numeration	2	2	3	28	39	24	3
			3	29	41	25	3
Measurement	2	2	3	24	43	25	1
			4	25	45	26	2
Geometry and Spatial Sense	2	2	6	24	43	23	1
			6	25	45	24	1
Patterning and Algebra	2	2	2	22	47	24	1
			2	23	49	25	1
Data Management and Probability	2	2	3	21	39	30	2
			3	22	41	32	2

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Superior North Catholic DSB

9	Schools with Grade 3 students	0%	In English as a Second Language Program
13	Classes with Grade 3 students	0%	Exempted in all three subjects
118	Grade 3 students	56%	Boys 43% Girls 1% Gender not specified
		1%	Of the students said they speak only or mostly in another language at home
		7%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	1	6	1	9	45	37	1
			1	10	48	40	1
Communication	1	6	2	11	42	30	3
			2	12	45	39	3
Organization of Ideas	1	6	2	16	34	39	3
			2	17	36	42	3
Application of Language Conventions	1	6	2	15	41	31	4
			2	16	44	34	5
Overall Level of Achievement in Reading	1	6	3	8	36	44	3
			4	8	38	47	3
Writing							
Reasoning	0	4	5	6	46	35	4
			5	6	48	36	4
Communication	0	4	5	3	51	31	6
			5	4	53	32	6
Organization of Ideas	0	4	5	3	54	28	5
			5	4	57	29	5
Application of Language Conventions	0	4	5	4	42	36	8
			5	4	44	38	8
Overall Level of Achievement in Writing	0	4	5	3	46	36	6
			5	3	48	38	6
Mathematics							
Problem Solving	0	4	2	14	37	41	2
			2	15	39	42	2
Understanding of Concepts	0	4	2	10	28	54	2
			2	11	29	57	2
Application of Mathematical Procedures	0	4	1	11	31	50	3
			1	12	32	52	4
Communication of Required Knowledge	0	4	3	20	52	19	2
			3	21	54	20	2
Overall Level of Achievement in Mathematics	0	4	3	9	32	49	2
			4	10	34	51	2
Mathematics Strands							
Number Sense and Numeration	0	4	3	10	36	44	3
			3	11	38	46	3
Measurement	0	4	3	14	36	41	3
			3	15	37	42	3
Geometry and Spatial Sense	0	4	3	12	40	39	3
			3	12	42	41	3
Patterning and Algebra	0	4	3	18	38	36	2
			3	19	40	37	2
Data Management and Probability	0	4	3	11	33	45	4
			3	12	35	47	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Superior-Greenstone DSB

8 Schools with Grade 3 students

11 Classes with Grade 3 students

176 Grade 3 students

1% In English as a Second Language Program

2% Exempted in all three subjects

63% Boys 37% Girls 0% Gender not specified

2% Of the students said they speak only or mostly in another language at home

7% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	2	1	2	14	55	26	1
			2	14	56	26	1
Communication	2	1	3	18	53	22	1
			4	18	55	22	1
Organization of Ideas	2	1	3	27	40	26	1
			4	28	41	26	1
Application of Language Conventions	2	1	5	24	39	27	1
			5	25	41	28	1
Overall Level of Achievement in Reading	2	1	6	13	48	28	2
			6	14	49	29	2
Writing							
Reasoning	2	2	2	5	53	35	2
			2	5	55	36	2
Communication	2	2	2	5	60	27	3
			2	5	62	28	4
Organization of Ideas	2	2	2	6	57	30	2
			2	6	59	31	2
Application of Language Conventions	2	2	2	6	51	35	2
			2	6	53	36	2
Overall Level of Achievement in Writing	2	2	2	3	55	34	2
			2	4	56	35	2
Mathematics							
Problem Solving	2	2	1	25	55	16	0
			1	26	56	17	0
Understanding of Concepts	2	2	2	15	52	28	1
			2	15	54	29	1
Application of Mathematical Procedures	2	2	0	15	54	27	1
			0	15	56	28	1
Communication of Required Knowledge	2	2	2	39	46	9	1
			2	41	48	9	1
Overall Level of Achievement in Mathematics	2	2	4	15	54	23	1
			4	15	56	24	1
Mathematics Strands							
Number Sense and Numeration	2	2	1	22	52	22	1
			1	22	54	22	1
Measurement	2	2	1	23	51	22	1
			1	24	52	22	1
Geometry and Spatial Sense	2	2	3	19	47	27	1
			3	20	48	28	1
Patterning and Algebra	2	2	2	24	50	21	0
			2	25	52	22	0
Data Management and Probability	2	2	0	14	51	31	1
			0	15	52	32	1

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Thames Valley DSB

139 Schools with Grade 3 students

293 Classes with Grade 3 students

5555 Grade 3 students

3% In English as a Second Language Program

3% Exempted in all three subjects

50% Boys 49% Girls 1% Gender not specified

4% Of the students said they speak only or mostly in another language at home

6% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	1	1	7	44	38	3
			1	7	47	41	3
Communication	6	1	3	9	41	36	4
			4	10	44	39	4
Organization of Ideas	6	1	3	15	37	34	4
			3	16	40	37	4
Application of Language Conventions	6	1	3	16	33	37	4
			3	18	35	40	4
Overall Level of Achievement in Reading	6	1	6	6	36	41	4
			7	7	39	44	4
Writing							
Reasoning	4	1	2	5	44	37	5
			2	6	47	39	6
Communication	4	1	2	6	44	36	6
			2	7	46	38	7
Organization of Ideas	4	1	2	7	46	35	5
			2	7	48	37	5
Application of Language Conventions	4	1	2	7	42	38	6
			2	8	44	40	6
Overall Level of Achievement in Writing	4	1	2	5	41	41	6
			2	5	43	43	6
Mathematics							
Problem Solving	3	1	1	16	42	34	3
			1	16	44	35	3
Understanding of Concepts	3	1	1	8	38	45	4
			1	8	40	47	4
Application of Mathematical Procedures	3	1	0	8	38	45	4
			0	8	40	47	4
Communication of Required Knowledge	3	1	1	20	46	26	2
			2	21	48	28	3
Overall Level of Achievement in Mathematics	3	1	2	8	39	43	3
			2	8	41	45	4
Mathematics Strands							
Number Sense and Numeration	3	1	1	14	36	41	5
			1	14	37	42	5
Measurement	3	1	1	11	40	40	4
			1	12	42	42	4
Geometry and Spatial Sense	3	1	3	10	42	38	2
			3	11	44	39	3
Patterning and Algebra	3	1	1	11	43	37	3
			1	12	45	39	3
Data Management and Probability	3	1	1	9	37	43	5
			1	9	39	45	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Thunder Bay Catholic DSB

17	Schools with Grade 3 students	2%	In English as a Second Language Program		
35	Classes with Grade 3 students	3%	Exempted in all three subjects		
630	Grade 3 students	46%	Boys	50% Girls	4% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home		
		8%	Of the students said they speak as often in English as in another language at home		

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	4	0	2	5	40	45	4
			2	5	42	47	4
Communication	4	0	5	9	35	41	6
			5	9	37	43	6
Organization of Ideas	4	0	4	11	36	38	6
			4	12	38	40	6
Application of Language Conventions	4	0	3	15	28	41	7
			4	16	30	43	7
Overall Level of Achievement in Reading	4	0	8	6	32	44	6
			8	6	34	46	6
Writing							
Reasoning	3	0	1	3	41	45	6
			1	3	43	47	6
Communication	3	0	1	4	41	41	8
			1	5	43	43	8
Organization of Ideas	3	0	1	5	44	40	6
			1	5	46	42	6
Application of Language Conventions	3	0	1	5	39	45	7
			1	5	40	46	7
Overall Level of Achievement in Writing	3	0	1	3	39	47	7
			1	3	40	48	7
Mathematics							
Problem Solving	3	1	1	17	41	33	2
			2	18	43	34	2
Understanding of Concepts	3	1	1	10	39	42	3
			1	10	41	44	4
Application of Mathematical Procedures	3	1	0	10	39	42	4
			1	11	41	44	4
Communication of Required Knowledge	3	1	3	19	44	27	2
			3	20	47	28	3
Overall Level of Achievement in Mathematics	3	1	3	9	39	41	3
			3	10	41	43	3
Mathematics Strands							
Number Sense and Numeration	3	1	2	14	37	37	5
			2	15	39	39	5
Measurement	3	1	1	10	47	33	3
			1	11	49	35	4
Geometry and Spatial Sense	3	1	3	13	40	37	3
			3	13	42	39	3
Patterning and Algebra	3	1	2	14	40	37	3
			2	15	42	38	3
Data Management and Probability	3	1	1	10	37	41	6
			1	11	39	43	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Toronto DSB

394	Schools with Grade 3 students	14%	In English as a Second Language Program
1001	Classes with Grade 3 students	4%	Exempted in all three subjects
17528	Grade 3 students	51%	Boys 48% Girls 1% Gender not specified
		16%	Of the students said they speak only or mostly in another language at home
		20%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	7	1	2	8	40	38	3
			3	9	43	41	4
Communication	7	1	6	10	37	35	4
			6	11	40	38	4
Organization of Ideas	7	1	4	14	33	36	5
			5	15	36	39	5
Application of Language Conventions	7	1	4	16	29	37	6
			5	17	32	40	6
Overall Level of Achievement in Reading	7	1	8	7	32	40	5
			9	7	35	43	5
Writing							
Reasoning	5	1	3	6	41	38	6
			3	6	44	40	7
Communication	5	1	3	7	41	35	7
			3	7	44	38	8
Organization of Ideas	5	1	3	7	42	36	6
			3	7	45	38	6
Application of Language Conventions	5	1	3	7	39	37	7
			3	8	41	40	8
Overall Level of Achievement in Writing	5	1	3	5	38	40	7
			3	6	41	43	8
Mathematics							
Problem Solving	5	1	2	16	36	34	5
			2	18	39	36	5
Understanding of Concepts	5	1	3	10	33	43	5
			3	10	35	46	6
Application of Mathematical Procedures	5	1	1	10	33	43	7
			1	11	35	46	7
Communication of Required Knowledge	5	1	3	19	39	28	5
			4	20	42	30	5
Overall Level of Achievement in Mathematics	5	1	4	9	33	41	6
			5	10	35	44	6
Mathematics Strands							
Number Sense and Numeration	5	1	2	15	31	38	8
			2	16	33	41	8
Measurement	5	1	2	12	36	38	5
			2	13	39	41	5
Geometry and Spatial Sense	5	1	5	11	35	39	5
			5	12	37	41	5
Patterning and Algebra	5	1	2	13	36	38	5
			2	13	38	40	6
Data Management and Probability	5	1	2	11	32	43	7
			2	12	34	45	7

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Toronto Catholic School Board

182 Schools with Grade 3 students

365 Classes with Grade 3 students

7022 Grade 3 students

4% In English as a Second Language Program

4% Exempted in all three subjects

51% Boys 49% Girls 1% Gender not specified

14% Of the students said they speak only or mostly in another language at home

27% Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	5	1	2	8	42	38	4
			2	8	45	41	4
Communication	5	1	6	9	38	37	4
			6	10	40	39	4
Organization of Ideas	5	1	4	14	35	36	4
			4	15	37	39	5
Application of Language Conventions	5	1	4	17	30	37	6
			4	19	32	39	6
Overall Level of Achievement in Reading	5	1	8	6	34	41	5
			9	7	36	43	5
Writing							
Reasoning	4	1	3	5	40	40	7
			3	5	42	42	7
Communication	4	1	3	5	39	40	8
			3	6	41	42	8
Organization of Ideas	4	1	3	6	41	39	6
			3	6	43	41	6
Application of Language Conventions	4	1	3	6	36	41	8
			3	6	38	44	9
Overall Level of Achievement in Writing	4	1	3	4	36	44	8
			3	4	38	46	8
Mathematics							
Problem Solving	4	1	2	20	41	28	3
			2	21	43	30	3
Understanding of Concepts	4	1	2	11	38	39	4
			3	11	40	42	4
Application of Mathematical Procedures	4	1	1	11	39	39	4
			1	12	41	41	5
Communication of Required Knowledge	4	1	3	23	41	24	3
			3	24	44	26	3
Overall Level of Achievement in Mathematics	4	1	5	10	39	37	4
			5	11	41	39	4
Mathematics Strands							
Number Sense and Numeration	4	1	2	16	37	35	5
			2	17	39	37	5
Measurement	4	1	2	15	40	34	4
			2	16	42	36	4
Geometry and Spatial Sense	4	1	5	13	41	34	3
			5	14	43	35	3
Patterning and Algebra	4	1	2	15	41	33	3
			2	16	43	35	3
Data Management and Probability	4	1	1	12	36	40	5
			1	13	38	42	6

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Trillium Lakelands DSB

39	Schools with Grade 3 students	0%	In English as a Second Language Program
90	Classes with Grade 3 students	5%	Exempted in all three subjects
1464	Grade 3 students	53%	Boys 47% Girls 0% Gender not specified
		1%	Of the students said they speak only or mostly in another language at home
		3%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	2	7	43	37	3
			2	8	47	40	3
Communication	7	1	5	10	40	35	3
			5	11	43	38	3
Organization of Ideas	7	1	4	14	37	33	4
			4	16	40	36	4
Application of Language Conventions	7	1	4	17	33	34	4
			4	18	36	37	4
Overall Level of Achievement in Reading	7	1	7	6	36	39	3
			8	7	40	42	4
Writing							
Reasoning	6	1	2	5	45	36	5
			3	6	48	38	6
Communication	6	1	2	6	44	35	6
			3	7	47	37	6
Organization of Ideas	6	1	2	7	46	34	5
			3	7	49	37	5
Application of Language Conventions	6	1	2	7	44	35	5
			3	8	47	38	5
Overall Level of Achievement in Writing	6	1	2	5	42	38	6
			3	5	45	41	6
Mathematics							
Problem Solving	6	1	1	16	42	31	3
			1	18	45	34	3
Understanding of Concepts	6	1	2	10	37	42	3
			2	11	40	45	3
Application of Mathematical Procedures	6	1	1	10	38	41	4
			1	10	41	44	4
Communication of Required Knowledge	6	1	2	19	46	24	3
			2	21	49	26	3
Overall Level of Achievement in Mathematics	6	1	3	9	38	40	3
			3	10	41	43	4
Mathematics Strands							
Number Sense and Numeration	6	1	1	15	35	36	6
			1	16	38	39	6
Measurement	6	1	1	13	41	35	4
			1	14	44	37	4
Geometry and Spatial Sense	6	1	3	12	40	36	3
			3	13	43	38	3
Patterning and Algebra	6	1	1	12	42	35	3
			2	13	45	38	3
Data Management and Probability	6	1	1	9	35	44	4
			1	10	38	47	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Upper Canada DSB

83	Schools with Grade 3 students	1%	In English as a Second Language Program
149	Classes with Grade 3 students	5%	Exempted in all three subjects
2549	Grade 3 students	50% Boys	48% Girls 1% Gender not specified
		3%	Of the students said they speak only or mostly in another language at home
		6%	Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	7	1	2	9	45	34	2
			2	10	49	37	2
Communication	7	1	6	11	41	32	3
			7	12	45	34	3
Organization of Ideas	7	1	5	16	38	32	2
			5	18	41	34	2
Application of Language Conventions	7	1	5	19	32	33	3
			5	21	35	36	3
Overall Level of Achievement in Reading	7	1	10	7	37	37	3
			10	8	40	39	3
Writing							
Reasoning	5	1	3	7	46	34	3
			3	7	49	36	4
Communication	5	1	3	8	45	33	4
			3	9	48	35	5
Organization of Ideas	5	1	3	9	46	32	3
			3	9	49	34	4
Application of Language Conventions	5	1	3	11	42	34	5
			3	11	44	36	5
Overall Level of Achievement in Writing	5	1	3	7	43	37	4
			3	7	46	39	4
Mathematics							
Problem Solving	5	1	1	21	45	26	1
			1	23	48	27	1
Understanding of Concepts	5	1	2	12	42	37	2
			2	12	45	39	2
Application of Mathematical Procedures	5	1	1	12	42	37	2
			1	13	45	39	2
Communication of Required Knowledge	5	1	4	25	45	20	1
			4	26	48	21	1
Overall Level of Achievement in Mathematics	5	1	5	11	43	35	2
			5	11	46	37	2
Mathematics Strands							
Number Sense and Numeration	5	1	1	18	40	33	3
			1	19	42	34	3
Measurement	5	1	1	16	44	31	2
			1	17	47	33	2
Geometry and Spatial Sense	5	1	5	14	44	31	1
			5	15	46	33	1
Patterning and Algebra	5	1	1	16	45	30	1
			2	17	48	32	1
Data Management and Probability	5	1	1	13	40	37	3
			1	14	42	39	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Upper Grand DSB

55	Schools with Grade 3 students	4%	In English as a Second Language Program
130	Classes with Grade 3 students	3%	Exempted in all three subjects
2428	Grade 3 students	52%	Boys 47% Girls 2% Gender not specified
		4%	Of the students said they speak only or mostly in another language at home
		7%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	4	1	1	6	41	45	3
			1	6	43	47	3
Communication	4	1	4	6	39	42	3
			4	7	41	45	4
Organization of Ideas	4	1	3	10	37	41	4
			3	10	39	44	4
Application of Language Conventions	4	1	3	12	32	44	5
			3	12	33	47	5
Overall Level of Achievement in Reading	4	1	6	4	33	48	4
			6	4	35	51	4
Writing							
Reasoning	3	1	2	4	41	43	6
			2	4	42	45	7
Communication	3	1	2	5	39	43	8
			2	5	41	45	8
Organization of Ideas	3	1	2	5	42	42	5
			2	5	44	44	6
Application of Language Conventions	3	1	2	5	40	42	7
			2	5	41	44	7
Overall Level of Achievement in Writing	3	1	2	4	36	47	7
			2	4	38	49	7
Mathematics							
Problem Solving	3	2	1	14	41	36	2
			1	15	43	38	3
Understanding of Concepts	3	2	2	7	35	47	4
			2	8	37	49	4
Application of Mathematical Procedures	3	2	0	8	36	46	5
			1	8	38	49	5
Communication of Required Knowledge	3	2	3	17	43	29	3
			3	18	45	31	3
Overall Level of Achievement in Mathematics	3	2	4	6	36	45	3
			4	7	38	48	4
Mathematics Strands							
Number Sense and Numeration	3	2	1	11	34	43	6
			1	12	36	45	6
Measurement	3	2	2	10	37	42	3
			2	11	39	45	4
Geometry and Spatial Sense	3	2	4	9	38	40	3
			4	10	40	42	3
Patterning and Algebra	3	2	1	10	41	38	4
			1	11	43	40	4
Data Management and Probability	3	2	1	8	34	46	5
			1	9	36	49	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Waterloo Catholic DSB

46 Schools with Grade 3 students

92 Classes with Grade 3 students

1777 Grade 3 students

5% In English as a Second Language Program

4% Exempted in all three subjects

51% Boys 48% Girls 0% Gender not specified

7% Of the students said they speak only or mostly in another language at home

11% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	9	1	1	7	44	36	2
			1	8	49	40	2
Communication	9	1	3	8	41	35	2
			4	9	45	39	3
Organization of Ideas	9	1	3	13	39	32	3
			3	14	43	36	3
Application of Language Conventions	9	1	3	16	35	33	3
			3	17	39	37	4
Overall Level of Achievement in Reading	9	1	6	6	37	38	3
			7	7	42	42	3
Writing							
Reasoning	5	1	1	5	43	40	5
			1	5	45	42	6
Communication	5	1	1	7	42	36	7
			1	7	45	39	7
Organization of Ideas	5	1	1	7	43	38	5
			1	8	46	40	5
Application of Language Conventions	5	1	1	9	42	35	7
			1	10	45	37	7
Overall Level of Achievement in Writing	5	1	1	5	40	41	6
			1	5	43	44	7
Mathematics							
Problem Solving	5	1	1	18	44	29	2
			1	20	46	31	2
Understanding of Concepts	5	1	2	9	40	40	3
			2	10	43	42	3
Application of Mathematical Procedures	5	1	0	10	41	39	4
			0	11	43	41	4
Communication of Required Knowledge	5	1	2	23	45	23	2
			2	24	48	24	2
Overall Level of Achievement in Mathematics	5	1	3	9	42	37	2
			3	10	45	40	3
Mathematics Strands							
Number Sense and Numeration	5	1	1	16	37	37	4
			1	16	39	39	4
Measurement	5	1	1	14	43	35	2
			1	15	45	37	2
Geometry and Spatial Sense	5	1	3	12	45	32	3
			3	12	47	34	3
Patterning and Algebra	5	1	1	14	43	34	3
			1	14	46	36	3
Data Management and Probability	5	1	1	9	39	42	4
			1	9	41	44	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Waterloo Region DSB

82 Schools with Grade 3 students

214 Classes with Grade 3 students

4107 Grade 3 students

8% In English as a Second Language Program

4% Exempted in all three subjects

49% Boys 50% Girls 1% Gender not specified

8% Of the students said they speak only or mostly in another language at home

8% Of the students said they speak as often in English as in another language at home

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	6	1	1	7	42	39	4
			1	7	45	42	4
Communication	6	1	5	8	38	38	5
			5	9	41	40	5
Organization of Ideas	6	1	4	14	34	36	5
			5	15	37	38	6
Application of Language Conventions	6	1	3	13	30	41	6
			3	14	32	44	7
Overall Level of Achievement in Reading	6	1	8	5	33	41	5
			8	6	36	45	6
Writing							
Reasoning	5	1	1	5	43	39	6
			1	5	46	41	6
Communication	5	1	1	7	43	37	7
			1	7	45	39	7
Organization of Ideas	5	1	1	7	43	38	5
			1	7	46	40	5
Application of Language Conventions	5	1	1	9	42	36	6
			1	9	44	39	7
Overall Level of Achievement in Writing	5	1	1	5	40	42	6
			1	6	42	44	7
Mathematics							
Problem Solving	4	1	2	17	40	32	4
			2	18	43	34	4
Understanding of Concepts	4	1	2	9	36	44	5
			2	9	38	46	5
Application of Mathematical Procedures	4	1	1	9	38	43	5
			1	10	40	45	5
Communication of Required Knowledge	4	1	3	19	42	27	4
			3	20	44	28	4
Overall Level of Achievement in Mathematics	4	1	4	8	37	41	5
			4	9	39	43	5
Mathematics Strands							
Number Sense and Numeration	4	1	2	14	35	39	6
			2	14	36	41	7
Measurement	4	1	1	12	39	39	4
			1	12	41	41	4
Geometry and Spatial Sense	4	1	4	10	40	37	4
			4	11	42	39	4
Patterning and Algebra	4	1	2	14	41	34	4
			2	14	43	36	5
Data Management and Probability	4	1	1	10	36	42	5
			1	11	38	45	5

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Wellington Catholic DSB

18	Schools with Grade 3 students	0%	In English as a Second Language Program
24	Classes with Grade 3 students	2%	Exempted in all three subjects
510	Grade 3 students	52%	Boys 47% Girls 0% Gender not specified
		4%	Of the students said they speak only or mostly in another language at home
		10%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	4	0	4	8	45	38	1
			4	8	47	40	1
Communication	4	0	6	11	37	39	2
			7	11	39	40	2
Organization of Ideas	4	0	4	16	38	36	1
			4	17	40	38	1
Application of Language Conventions	4	0	5	18	35	35	2
			5	19	36	37	2
Overall Level of Achievement in Reading	4	0	9	7	37	41	1
			10	7	39	43	1
Writing							
Reasoning	3	0	2	4	48	39	4
			2	4	49	40	4
Communication	3	0	2	6	45	38	6
			2	6	47	39	6
Organization of Ideas	3	0	2	6	46	38	4
			2	6	48	40	4
Application of Language Conventions	3	0	2	7	40	44	5
			2	7	42	45	5
Overall Level of Achievement in Writing	3	0	2	4	43	43	5
			2	4	44	44	5
Mathematics							
Problem Solving	2	0	3	20	49	25	1
			3	20	50	26	1
Understanding of Concepts	2	0	3	10	45	39	1
			3	10	46	40	1
Application of Mathematical Procedures	2	0	1	11	43	40	2
			1	12	44	41	2
Communication of Required Knowledge	2	0	3	24	48	23	1
			3	24	49	23	1
Overall Level of Achievement in Mathematics	2	0	5	10	46	36	1
			5	10	47	37	1
Mathematics Strands							
Number Sense and Numeration	2	0	3	17	46	31	2
			3	17	47	31	2
Measurement	2	0	2	14	47	33	1
			2	14	48	34	1
Geometry and Spatial Sense	2	0	3	14	47	33	2
			3	14	48	33	2
Patterning and Algebra	2	0	1	15	47	32	3
			1	16	48	32	3
Data Management and Probability	2	0	2	10	40	44	3
			2	10	41	45	3

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: Windsor-Essex Catholic DSB

49	Schools with Grade 3 students	1%	In English as a Second Language Program
86	Classes with Grade 3 students	5%	Exempted in all three subjects
1733	Grade 3 students	51%	Boys 49% Girls 0% Gender not specified
		7%	Of the students said they speak only or mostly in another language at home
		11%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	8	2	2	9	43	33	2
			3	10	48	37	3
Communication	8	2	7	11	38	31	3
			7	12	42	35	3
Organization of Ideas	8	2	5	17	35	30	3
			6	18	39	33	3
Application of Language Conventions	8	2	5	20	28	33	3
			6	23	31	37	3
Overall Level of Achievement in Reading	8	2	10	7	35	35	3
			11	8	39	39	3
Writing							
Reasoning	7	2	4	7	43	32	5
			4	7	48	36	5
Communication	7	2	4	8	40	34	6
			4	8	44	37	6
Organization of Ideas	7	2	4	8	44	31	4
			4	9	48	34	4
Application of Language Conventions	7	2	4	9	39	35	5
			4	10	43	38	5
Overall Level of Achievement in Writing	7	2	4	6	40	37	5
			4	7	44	40	5
Mathematics							
Problem Solving	5	3	2	25	41	23	2
			3	27	44	25	2
Understanding of Concepts	5	3	2	14	42	31	3
			3	16	45	34	3
Application of Mathematical Procedures	5	3	1	16	40	32	4
			1	18	43	35	4
Communication of Required Knowledge	5	3	3	28	43	17	2
			3	30	46	18	2
Overall Level of Achievement in Mathematics	5	3	4	14	41	30	3
			5	15	44	33	3
Mathematics Strands							
Number Sense and Numeration	5	3	2	21	37	30	3
			2	22	40	32	4
Measurement	5	3	2	18	42	29	2
			2	20	45	31	2
Geometry and Spatial Sense	5	3	5	17	43	26	2
			5	18	46	28	2
Patterning and Algebra	5	3	2	20	42	27	2
			2	22	45	29	2
Data Management and Probability	5	3	2	16	38	33	4
			2	17	41	36	4

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: York Catholic DSB

62	Schools with Grade 3 students	7%	In English as a Second Language Program
145	Classes with Grade 3 students	2%	Exempted in all three subjects
3160	Grade 3 students	50% Boys	50% Girls 1% Gender not specified
		8%	Of the students said they speak only or mostly in another language at home
		17%	Of the students said they speak as often in English as in another language at home

Reading	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reasoning	3	1	1	4	39	47	5
			1	5	40	49	6
Communication	3	1	1	6	37	46	6
			1	6	38	48	6
Organization of Ideas	3	1	1	10	35	44	6
			1	10	36	45	7
Application of Language Conventions	3	1	1	12	31	45	7
			1	13	32	47	8
Overall Level of Achievement in Reading	3	1	3	4	32	51	7
			3	4	33	53	7
Writing							
Reasoning	3	1	1	2	34	49	10
			1	2	36	50	11
Communication	3	1	1	3	34	47	12
			1	3	36	49	12
Organization of Ideas	3	1	1	3	36	48	10
			1	3	37	49	10
Application of Language Conventions	3	1	1	3	33	47	12
			1	4	35	49	12
Overall Level of Achievement in Writing	3	1	1	2	30	52	12
			1	2	31	54	12
Mathematics							
Problem Solving	2	0	1	15	43	35	4
			1	16	44	36	4
Understanding of Concepts	2	0	1	8	38	46	5
			1	8	39	47	5
Application of Mathematical Procedures	2	0	0	7	39	45	6
			0	8	40	47	6
Communication of Required Knowledge	2	0	1	17	45	29	5
			1	18	46	30	5
Overall Level of Achievement in Mathematics	2	0	2	7	40	44	5
			2	7	41	45	5
Mathematics Strands							
Number Sense and Numeration	2	0	1	14	38	38	7
			1	14	39	40	7
Measurement	2	0	1	10	41	41	5
			1	10	42	42	5
Geometry and Spatial Sense	2	0	2	10	42	40	4
			2	10	43	41	4
Patterning and Algebra	2	0	1	11	41	40	4
			1	11	42	41	4
Data Management and Probability	2	0	0	7	34	48	8
			0	8	35	50	8

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Board name: York Region DSB

99	Schools with Grade 3 students	8%	In English as a Second Language Program		
215	Classes with Grade 3 students	3%	Exempted in all three subjects		
4997	Grade 3 students	51%	Boys	48% Girls	1% Gender not specified
		8%	Of the students said they speak only or mostly in another language at home		
		15%	Of the students said they speak as often in English as in another language at home		

	Exempt	No Data	Not Enough Information to Score	Level 1	Level 2	Level 3	Level 4
Reading							
Reasoning	5	1	1	4	38	47	4
			1	5	40	50	4
Communication	5	1	2	5	35	46	5
			3	6	38	49	5
Organization of Ideas	5	1	2	9	32	44	6
			3	9	35	47	7
Application of Language Conventions	5	1	2	9	28	46	8
			2	10	30	49	8
Overall Level of Achievement in Reading	5	1	5	3	30	50	6
			5	3	32	54	6
Writing							
Reasoning	4	1	1	3	36	46	9
			2	3	38	48	9
Communication	4	1	1	3	37	43	10
			1	4	39	46	10
Organization of Ideas	4	1	1	4	38	44	8
			1	4	40	47	8
Application of Language Conventions	4	1	1	4	35	45	9
			1	4	37	47	10
Overall Level of Achievement in Writing	4	1	1	2	33	48	10
			2	2	35	51	10
Mathematics							
Problem Solving	4	1	1	10	37	41	6
			1	11	39	43	6
Understanding of Concepts	4	1	1	5	30	52	8
			1	5	31	55	8
Application of Mathematical Procedures	4	1	0	5	30	52	9
			0	5	31	54	9
Communication of Required Knowledge	4	1	2	12	41	34	7
			2	12	43	36	7
Overall Level of Achievement in Mathematics	4	1	2	4	30	51	8
			3	4	32	53	8
Mathematics Strands							
Number Sense and Numeration	4	1	1	9	31	44	10
			1	9	33	46	11
Measurement	4	1	1	7	35	46	8
			1	7	36	48	8
Geometry and Spatial Sense	4	1	2	6	34	47	6
			2	6	36	49	6
Patterning and Algebra	4	1	1	7	36	45	7
			1	8	37	47	7
Data Management and Probability	4	1	1	6	28	53	8
			1	6	30	55	9

Method 1 includes students who were exempted and students for whom no data were collected.
Method 2 (shaded line) excludes students who were exempted and students who did not complete any work during the assessment (No Data).

Appendix B

EQAO Assessment Process

THE EQAO ASSESSMENT PROCESS

The EQAO assessment process extends over a period of approximately two years. This process comprises several stages: development of instruments, field testing, administration, scoring and reporting of the results. Each step in this long process is made possible by the cooperation of many participants from every part of Ontario.

Development of Instruments

EQAO assessments provide students with engaging, challenging and relevant tasks through which they can demonstrate their knowledge and skills in reasoning, communicating and problem solving. The assessments were developed to measure students' achievement of the expectations in the provincial curriculum and to give teachers examples of quality assessments that can be adapted and used in the classroom.

The assessment materials include the following components:

- *Administration Guide for Teachers and Administrators*, which outlines EQAO policies and administration procedures
- *Teacher's Daily Plans*, which provide detailed administration instructions and describe the group activities that are incorporated into the assessment
- student readings (Grade 3 only)
- student assessment booklets, which constitute the written portion of the assessment
- questionnaires for the student, parents, teacher and principal, which are used to gather information about the context in which student learning occurs

The Grade 3 assessment is an integrated unit that measures students' knowledge and skills in reading, writing and mathematics. The Grade 9 assessment unit measures students' knowledge and skills in mathematics.

Throughout the development phase, EQAO benefited from the expertise of advisory teams consisting of educators, researchers and parents.

Steering Committee

The steering committee ensures that the development teams adhere to principles that are consistent with

- EQAO's mission,
- EQAO's values,
- the curriculum expectations set out by the Ministry,
- exemplary classroom practices,
- the age of the students being assessed, and
- fairness and equity.

Development Committee

The development committee works in collaboration with EQAO staff. Composed of teachers chosen for their expertise in assessment, the committee develops assessment instruments that conform to EQAO's guiding principles and that will yield valid and reliable data about student achievement.

In developing the assessment instruments, the committee ensures that

- the questions and assigned tasks are clear and unambiguous, and conform to the *Ontario Curriculum*;
- the assessment tasks actually measure what they are intended to measure;
- students have several opportunities to demonstrate their knowledge and skills;
- the assessment incorporates real-life activities with which the students are familiar; and
- students will feel at ease and approach the assessment in a natural manner.

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EQAO Assessment Process

Revision Committee

The revision committee is responsible for revising the assessment materials in light of a thorough analysis of the field test data.

Validation Committee

The validation committee determines whether the assessment instruments correspond to the guiding principles on which the development of the assessment is based.

Field Testing

The field tests permit in-depth analysis of

- assessment materials and instruments; and
- procedures related to training, administration, scoring, data analysis and distribution and receipt of assessment materials.

Teacher Participation

- The field test was administered in the fall of 1997 by volunteer Grade 4 teachers, and in February 1998 by volunteer Grade 10 teachers.
- Approximately 20 teachers chose samples from among the completed student assessment booklets to serve as examples of student performance at each of the four performance levels.
- Approximately 60 teachers participated in the scoring of the student assessment booklets.
- Each participant in the field test was required to sign a confidentiality agreement form.

Participant Questionnaires

In order to obtain feedback for effective improvement of assessment materials, instruments and procedures, questionnaires were distributed

- to the teachers who administered the assessments;
- to the Grade 10 students who participated in the assessment;
- to the EQAO quality-control officers who made on-site visits during the administration of the assessments;
- to the teachers who chose samples of student work; and
- to the markers who scored the student materials.

Analysis of Assessment Instruments and Procedures

Analytic scoring of each question in a sample of student booklets allowed the language and level of difficulty to be checked for each question. A holistic scoring method allowed the verification of

- the knowledge and skills scales that determine each student's achievement with regard to the four performance levels;
- the procedures for scoring and data analysis;
- the validity of the assessment; and
- the overall applicability of the assessment to the various strands and categories set out in the *Ontario Curriculum*.

Rigorous measures were taken to ensure the reliability of the scoring (see "Administration" below).

At the conclusion of the field test, the quantity and quality of the data were examined so that the reliability of the assessment materials, instruments and procedures could be analyzed.

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EQAO Assessment Process

Administration

Consistency is essential to any large-scale assessment in order to ensure a high degree of reliability in the reporting of student achievement. EQAO ensures consistency through regular communication, extensive training and implementation of quality-control measures.

Communication

EQAO communicates regularly with educators, parents and other stakeholders through a variety of media: Web site, telephone, fax, newsletters and communication packages for teachers and parents, training and communication packages for teachers and parents, videocassettes, sample units and the *Letter to Parents*. This year, EQAO published a *Parent Handbook* which provided detailed information about province-wide testing and about the Grade 3 and Grade 9 assessments.

A number of communications for parents were translated into several languages.

Training and Professional Development

EQAO trained master trainers designated by their school boards. The master trainers then trained all principals in their board who had Grade 3 classes in their schools. The principals in turn trained the Grade 3 teachers in their schools. For Grade 9, EQAO trained the teachers directly. The training sessions

- familiarize teachers with the assessment unit and the scoring scales;
- detail each teacher's role in reliably administering the assessment unit;
- ensure understanding and consistent application of EQAO's policy on exemptions and accommodations; and
- develop teacher confidence in the administration of the assessment unit.

Before their training sessions, teachers are provided with sample activities to familiarize them with the assessment process.

Quality Control

EQAO makes extensive use of questionnaires and on-site observations to monitor consistency. Observers reported on the procedures followed in administering the various Grade 3 and Grade 9 assessments. These observers made one-day visits to 10% of classrooms in the province and provided EQAO with precise data to determine the degree of consistency achieved provincially.

After the administration of the assessments, a questionnaire dealing with the training process was sent to 10% of the participating teachers. A separate questionnaire was completed by the markers. The responses gathered will assist EQAO in improving future assessments.

Marking

Before marking the assessment, approximately 30 educators for each of the Grades 3 and 9 assessments reviewed the scoring scales and chose samples of student work from among the student booklets for each subject. A rationale was developed for each booklet. The rationales provided a link between student performance and the language in the assessment scale. Other student booklets were randomly selected and scored for use as training booklets, orientation booklets and reliability booklets.

Markers were selected from all regions of the province for their knowledge and skill in the subject being assessed, their knowledge of the provincial curriculum and their expertise in teaching students in the primary and/or junior grades. In July, marking of the writing portion of the Grade 3 assessment took place in Ottawa, while marking of the reading and mathematics portions took place in Toronto. The Grade 9 mathematics assessment was marked in Sudbury in July. Markers received extensive training throughout the marking period.

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EQAO Assessment Process

The Grade 3 student booklets were scored by a holistic scoring method and according to the four categories in reading, writing and mathematics and the five strands in mathematics. In Grade 9 mathematics, student achievement was assessed using four categories and the five strands. To determine the score for a category or strand, scorers looked at a student's response to a group of questions to determine the overall quality of each student's performance in relation to the scoring scales and the samples of student work.

The scoring scales for the assessments were developed in relation to the provincial curriculum in effect at the time of the assessment and to reflect the expectations being assessed. These scales were developed by educators and reviewed by researchers.

Reliability and consistency in marking are critical for valid interpretations of results. To ensure that marking was conducted in a reliable manner, EQAO provided a minimum of two days of training to all teachers involved in the marking.

The following reliability checks are embedded into the marking process:

Orientation Booklets
At the beginning of each day all scorers mark a pre-selected and pre-scored booklet. They record their score for each indicator on an Individual Reliability Form. Group leaders then generate a group median, which is also recorded on the Individual Reliability Form. As a result, each marker has two scores to compare. A discussion follows, focusing on any aspects of the selected booklet that were difficult to score or on group and individual trends in the marking. EQAO collects group median scores as one measure of inter-group reliability.

Paired Marking
Each day, following the completion of the orientation booklet, markers score at least one booklet with a partner. Each marker has a new partner every day. Paired marking is another step in ensuring that markers are consistent in their interpretation of student performance and the scoring scales. Group leaders can use paired marking to reassign a scorer who demonstrates marking biases to a more reliable and consistent partner.

Reliability Booklets
A pre-selected and pre-scored booklet is scored individually by all markers and group leaders each day. Marking is recorded by each scorer on the Individual Marker Reliability Form and on a designated Reliability Scoring Sheet prepared for electronic scanning. Data from this exercise are used to generate a report outlining any overall trends or issues that need to be addressed. Reliability reports are given to the group leaders, who in turn take the information back to their marking group. Group leaders discuss with EQAO staff strategies to use when an entire group demonstrates a "drift" or individual markers demonstrate a bias in their scoring. The reliability booklet ensures consistency in marking within groups and between all marking groups.

Calibration Booklets
A random selection of student booklets is re-marked each day. For example, in the Grade 3 marking, 50 unidentified booklets were reinserted and marked seven times over the course of the marking period.

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EQAO Assessment Process

Anomaly Reports
Once sufficient scoring has been completed for normal scoring patterns to emerge, Anomaly Reports are generated indicating all instances of significant marker bias. In these cases, all batches or booklets scored by these individuals are re-marked. Group leaders or EQAO subject leaders work with the least reliable markers to get them back on track and then carefully monitor their future marking.

Reporting

EQAO has prepared a number of different kinds of reports for educators, parents, students and all stakeholders about the achievement of students in Ontario schools. Each report provides a context for achievement.

Individual Student Reports
EQAO prepares a report for each student participating in the Grade 3 assessment. This report contains 17 pieces of information about the performance of each student in reading, writing and mathematics. The reports are sent to schools in October for distribution to homes. They allow parents, teachers and students to reflect on student achievement in relation to classroom work and also to analyze student achievement in relation to what needs to be accomplished to help the student to progress.

School Reports
EQAO provides aggregated student achievement data and aggregated contextual information based on the questionnaires completed by the students, parents and principals to all schools with Grade 3 classes. EQAO also provides ideas for schools to assist them in preparing a school report for the community.

Board Reports
EQAO provides each school board with aggregated summary data of the Grade 3 student achievement. The report also includes a summary of contextual information collected through teacher, principal, student and parent questionnaires.

Provincial Report
This provincial report on student performance in English-language schools contains detailed contextual information for the Grade 3 and Grade 9 assessments. EQAO anticipates that this report will serve as a catalyst for a discussion on improvement.

Appendix C

Grade 3 Assessment of Reading, Writing and Mathematics: 1996-1997 Recommendations

READING

1. That teachers use regular and precise observation of individual students' reading skills to identify students who require intervention to be successful.
2. That teachers use a variety of individual and group approaches to teach skills and to extend students' understanding of what they've read (e.g., recognizing main ideas and supporting detail, dramatizing the story, writing to express their understanding).
3. That teachers frequently use a wide range of reading materials and text forms, in addition to stories (e.g., information articles, poetry, letters, plays).
4. That teachers and parents pay attention to the kinds of material that girls and boys find interesting and use this knowledge to motivate and encourage both girls and boys to read.
5. That primary teachers collaborate to create scoring scales for reading and work regularly in teams throughout the year to assess their students' work at various stages.
6. That educators and school councils work to increase adult awareness of the value of reading daily to children, in any language, regardless of the child's ability to read independently.
7. That parents talk about reading regularly with their children by discussing what they are reading, helping them understand it and encouraging them to read a wide range of materials in any language.
8. That parents regularly listen to their children read.
9. That teachers work together to develop ways (e.g., scoring scales and models) to describe good work in reading to help all their students become better self-assessors.
10. That teachers become competent in the use of a range of assessment strategies for evaluating reading performance (e.g., oral reading, miscue analysis, cloze passages, retelling, predicting, inference).

WRITING

1. That teachers use regular and precise observation of individual students' writing skills to identify students who require intervention to be successful.
2. That teachers give students detailed feedback, both orally and in writing, about early stages and drafts of their writing and monitor improvements in subsequent efforts.
3. That teachers give students instruction and practice in correcting and revising both the organization and the conventions of their own writing.
4. That teachers keep dated and annotated samples of each student's writing and use them to show the student and the parent(s) the progress that has been made.
5. That teachers and parents work together to engage students in enjoyable and useful writing activities such as lists and notes about everyday activities, poems, letters, neighbourhood newsletters or classroom publications.
6. That students do more writing and write frequently in a variety of forms (e.g., instructions, informational items, letters).

Appendix C

Grade 3 Assessment of Reading, Writing and Mathematics: 1996-1997 Recommendations

7. That teachers work together to develop ways (e.g., scoring scales and models) to describe good work in writing to help all their students become better self-assessors.
8. That teachers use scoring scales (descriptions of achievement levels) and anchor papers (examples of writing at each level) to assess student work and to improve assessment of student work and provide better feedback.

MATHEMATICS

1. That teachers use regular and precise observation of individual students' mathematics skills to identify students who require intervention to be successful.
2. That teachers distribute time that they spend on mathematics across all five strands so that all of the concepts and procedures are taught.
3. That teachers use a range of activities (e.g., practical problem solving, drill) to extend students' understanding and application of number sense and numeration.
4. That teachers regularly integrate activities that involve mathematics across all subject areas in the school.
5. That teachers work together to develop ways (e.g., scoring scales and models) to describe good work in mathematics to help all their students become better self-assessors.
6. That boards provide specific staff development programs for primary teachers in the areas where they indicate discomfort or where the children's results are clustered in Levels 1 and 2.
7. That schools have mathematics fairs that involve parents and/or initiate family mathematics programs (in which parents and children work together on mathematical concepts).
8. That teachers communicate with parents, describing home-based and out of school activities they can do with the children to develop mathematical skills in number sense, measurement, patterning, geometry, graphs and probability.
9. That teachers and parents work together to engage students in enjoyable and useful mathematics activities (e.g., mathematical journal writing and mathematics field trips) and using mathematics in the home (e.g., measuring for new carpets, working with recipes) and asking children to explain their thinking.